

GOVERNMENT OF INDIA

DEPARTMENT OF ARCHAEOLOGY

**CENTRAL ARCHAEOLOGICAL
LIBRARY**

CALL No.	572.05	J.R.A.I.
	Vol	2

D.G.A. 79.





THE
JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.



VOL. II.

32467

572.25
—
J. R. A. I.

LONDON:
PUBLISHED FOR
The Anthropological Institute of Great Britain and Ireland,
BY
TRÜBNER & Co., 57 & 59, LUDGATE HILL.
All Rights Reserved.

1873.

CENTRAL ARCHAEOLOGICAL
LIBRARY, NEW DELHI.

Acc. No. 33609

Date 21.12.57

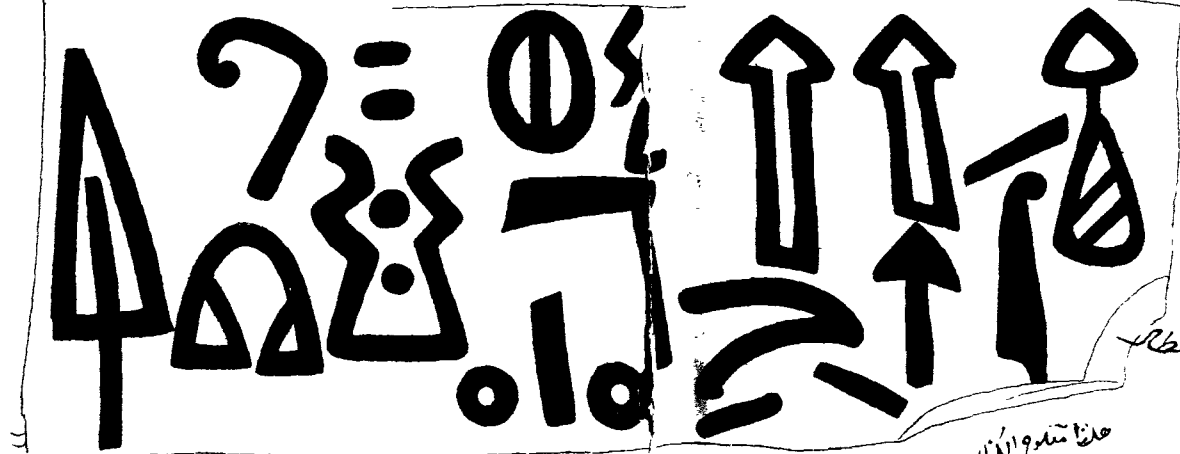
Call No. 592.62

S R A I.



3RD OR LOWEST LINE OF
INSCRIPTION N°2 INSIDE THE GARDEN OF SAYYID OMAR.

تاج التاج الذي في بستان الكيعر ابن الشيخ صر بالقرين باب الحسنة (سعداء) بطن البلاء الذي بطن الحبر



هنا تبدو الدار

Apparently the lines never
had any character here

Well Br. ... London

THE HAMAS STONES.



2ND INSCRIPTION.
STONE LYING IN THE GARDEN OF SAYYID OMAR.
1ST & 2ND LINES.

ما بقية من نبي الجسد ومن هذا ركن

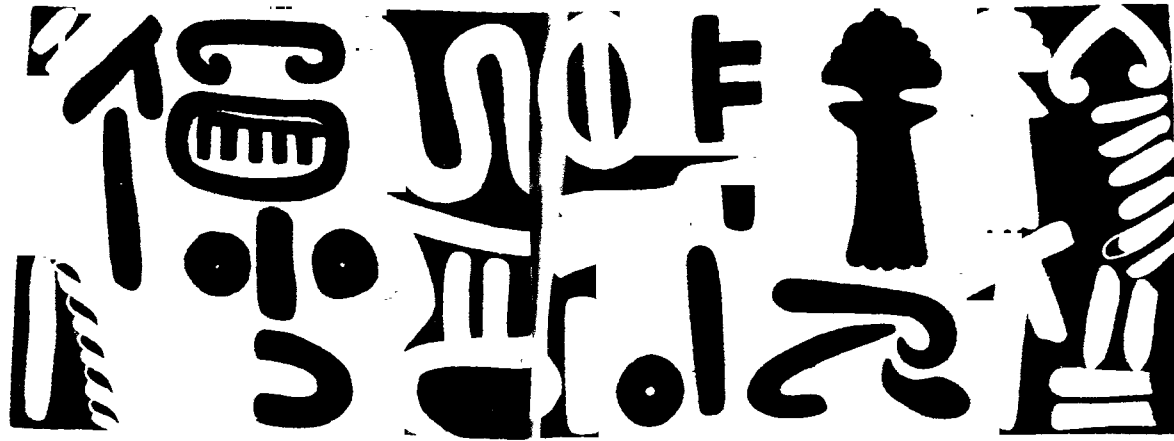
هذا التاريخ موجود في حنينة السيد عمر بن الشيخ

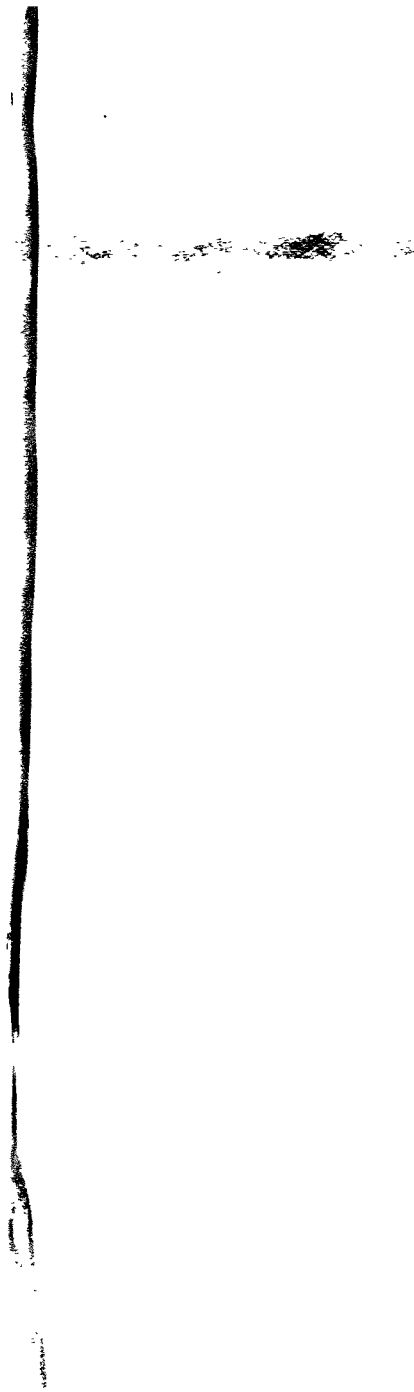
Handwritten Arabic script in two rows, separated by a horizontal line. The script is in a stylized, cursive form, likely representing the 1st and 2nd lines of the inscription mentioned in the header. The text is written in black ink on a light background.

الطائر السليم الذي هو دجاجة الذهب بجانب ستة سلاسل الكوكب سماه ومن هذا الذي هو

Nº 1.
INSCRIPTION.
3RD LINE

من هنا انجو كسورة والخط انه فاقه عروف





هذا رسم من الرسوم التي كانت في بيت المقدس في عهد داود

No 1.
INSCRIPTION.
1ST LINE.

من هذا الرسم من الرسوم التي كانت في بيت المقدس في عهد داود



من هذا رسم من الرسوم التي كانت في بيت المقدس في عهد داود

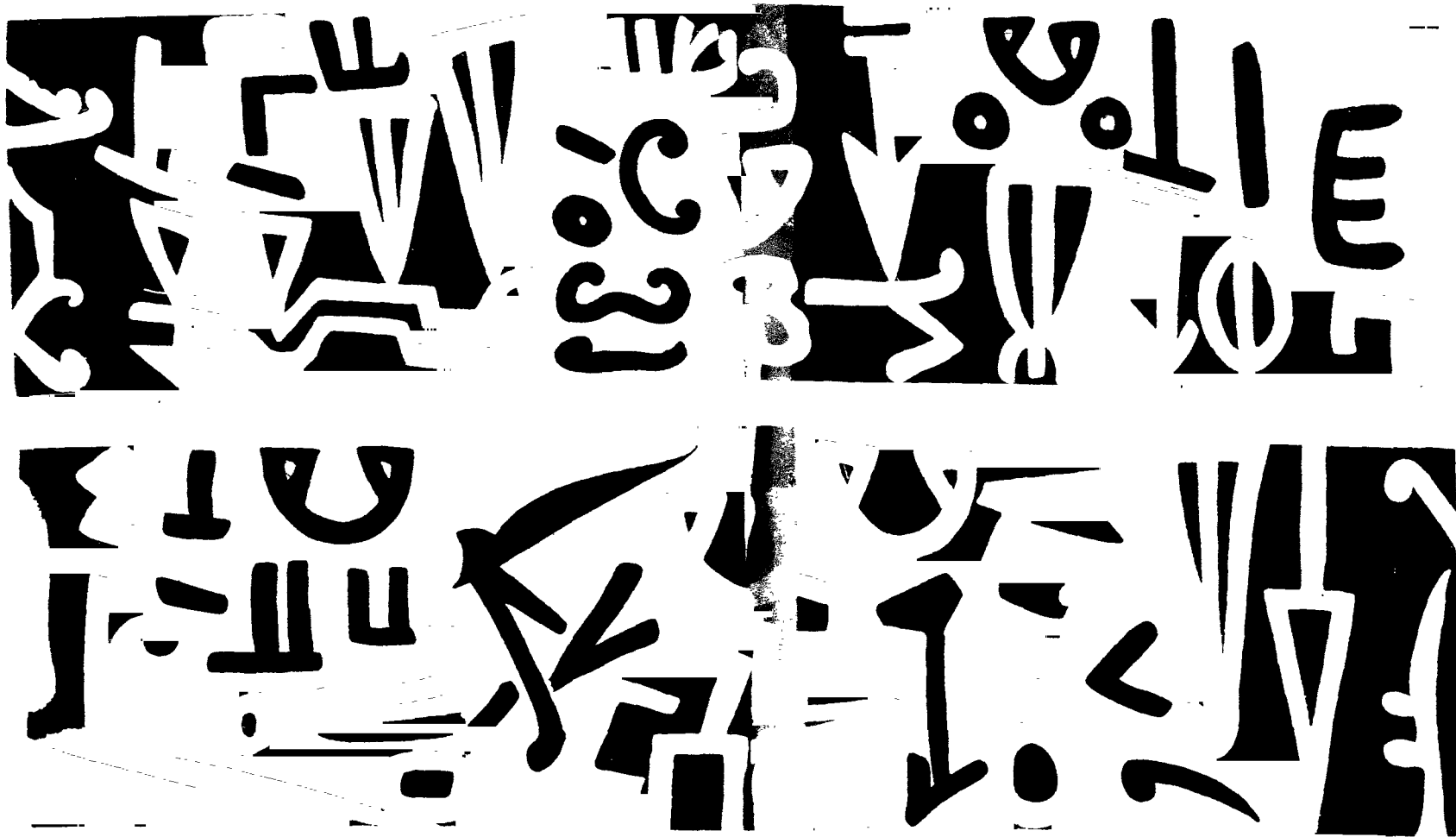
No 1.
INSCRIPTION.
2ND LINE.

من هذا الرسم من الرسوم التي كانت في بيت المقدس في عهد داود



3RD INSCRIPTION.
STONE IN LATAK EL TAHUN.

هذه التماثيل من حروف
الذي تم كتابته في
من باب المسرحية.



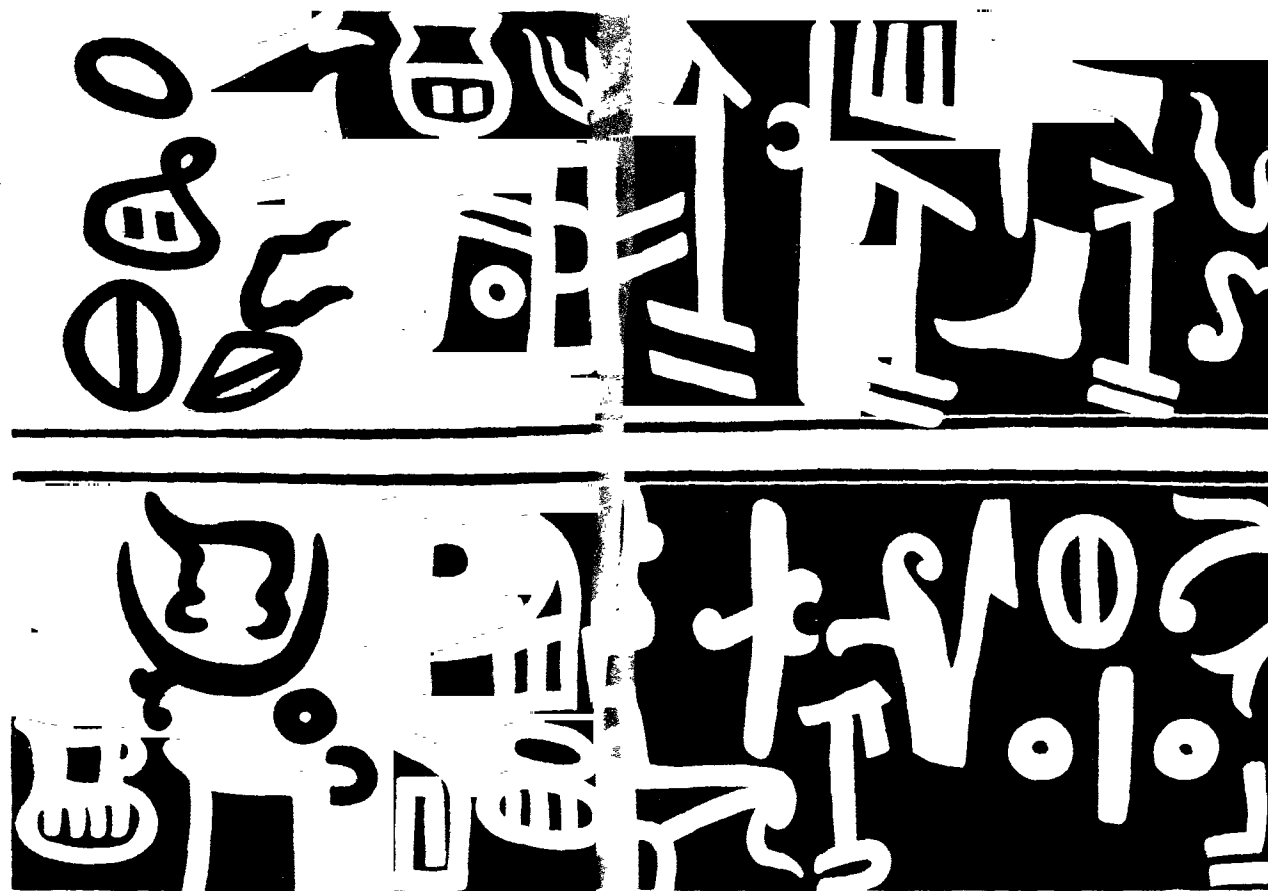
1ST F O

Nº4 INSCRIPTION UPON THE STIE NEAR THE JISR EL SHAYKH.
(NORT SIDE)

هذه التاجية من عهد الملك الناصر محمد بن قلاوون
وهذا التاجية من عهد الملك الناصر محمد بن قلاوون



EAST OF
 NO. 4 INSCRIPTION UPON THOPE NEAR THE JISR EL SHAYKH.
 (INSIDE.)



1. The first part of the document is a list of names and addresses of the members of the committee.

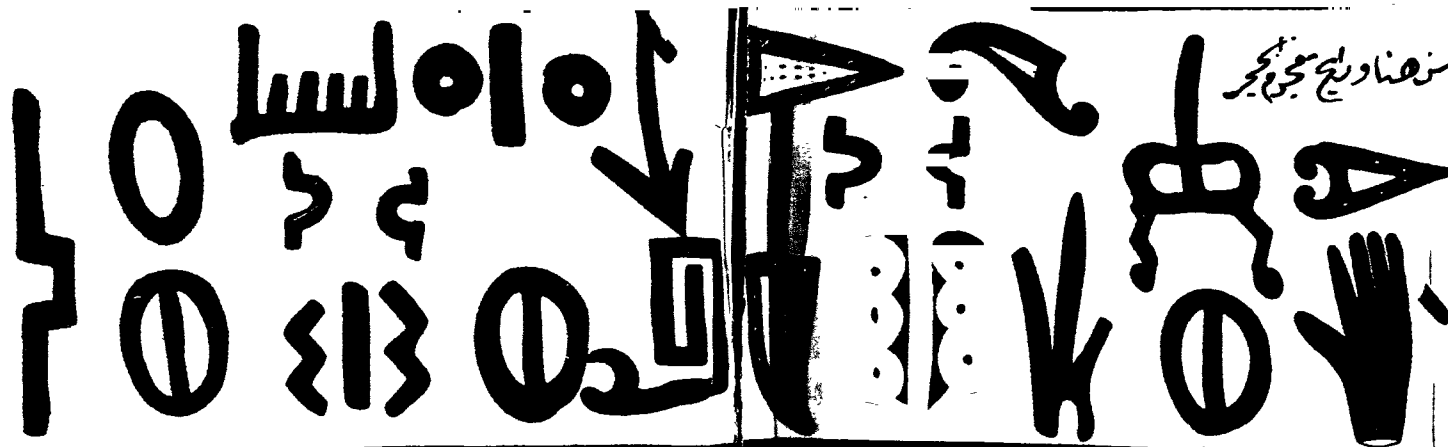
2. The second part of the document is a list of names and addresses of the members of the committee.

3. The third part of the document is a list of names and addresses of the members of the committee.

(5TH INSCRIPTION (LONG LINES))
STONE Nº4 ON WEST SIDE OF SHOP IN BAZAR
(5TH LINE.)

بما على جسر الشيخ بنجه رجا الال طه ورضيكون كالة بنطها الحجر محوت ومنفردو غاب

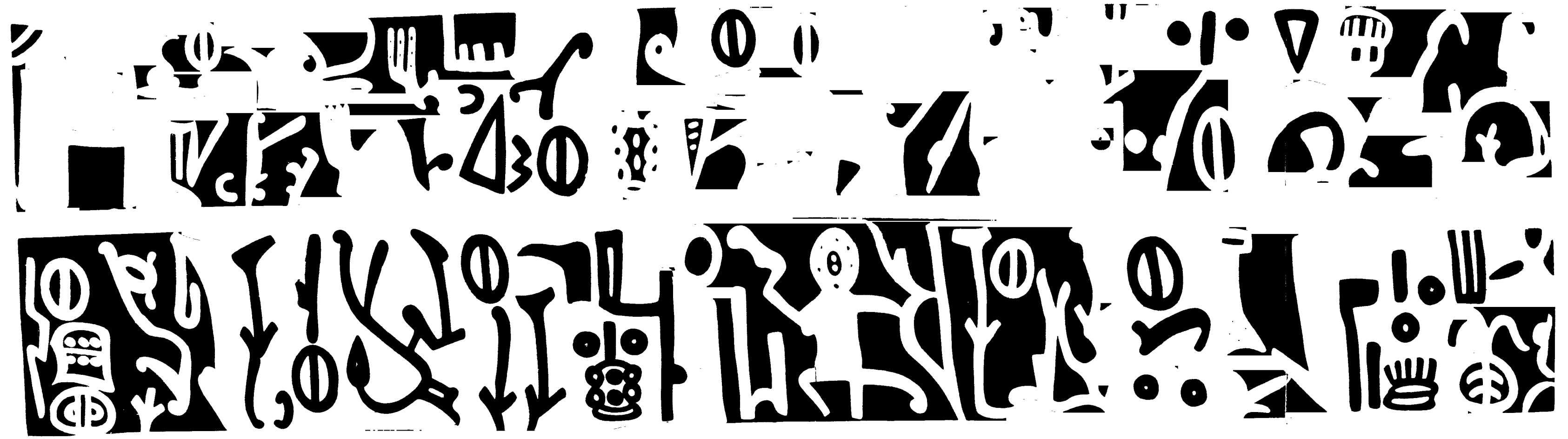
Stone here
broken.





5TH INSCRIPTION LONG LINES:
 3000 004 IN WEST END OF SEP 11 BAZAR.
 2ND & 3RD LINES

سمايل الحق سمايل هذا سمايل الناجع على بسم الله الرحمن الرحيم هذا سمايل الناجع على بسم الله الرحمن الرحيم





THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

FEBRUARY 5TH, 1872.

DR. R. S. CHARNOCK, *Vice-President, in the Chair.*

THE minutes of the last ordinary meeting were read and confirmed.

W. J. JEAFFRESON, Esq., M.A., of Clifton Gardens, Folkestone, was elected a Member. H. H. HOWORTH, Esq., M.A., was elected a Local Secretary for South Lancashire.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From JAMES BURNS, Esq.—Human Nature for January and February, 1872.

From the AUTHOR.—The Food Journal for January and February, 1872.

From MESSRS. CASSELL, PETTER, and GALPIN.—Illustrated Album for 1871.

From the WAR DEPARTMENT, U.S.—Report of Surgical Cases in the United States Army, Circular No. 3, 1871.

From the SOCIETY.—Proceedings of the Kilkenny and South-East of Ireland Archæological Society, No. 58.

From the AUTHOR.—Ueber die Methode der Vorgeschichtlichen Forschung, by Professor H. Schaafhausen.

From the EDITOR.—La Revue Scientifique for January, 1872.

From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris, June and July, 1870.

From the EDITOR.—The Mining Magazine and Review, No. 1, January, 1872.

From the SOCIETY.—Archives of Science and Transactions of the Orleans County Society of Natural Science, 3 Nos., vol. i.

From the MUSEUM.—Annual Report of the Trustees of the Museum of Comparative Zoology at Harvard College, U.S., for 1870.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

FEBRUARY 5TH, 1872.

DR. R. S. CHARNOCK, *Vice-President, in the Chair.*

THE minutes of the last ordinary meeting were read and confirmed.

W. J. JEAFFRESON, Esq., M.A., of Clifton Gardens, Folkestone, was elected a Member. H. H. HOWORTH, Esq., M.A., was elected a Local Secretary for South Lancashire.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From JAMES BURNS, Esq.—Human Nature for January and February, 1872.

From the AUTHOR.—The Food Journal for January and February, 1872.

From Messrs. CASSELL, PETTER, and GALPIN.—Illustrated Album for 1871.

From the WAR DEPARTMENT, U.S.—Report of Surgical Cases in the United States Army, Circular No. 3, 1871.

From the SOCIETY.—Proceedings of the Kilkenny and South-East of Ireland Archæological Society, No. 58.

From the AUTHOR.—Ueber die Methode der Vorgeschichtlichen Forschung, by Professor H. Schaafhausen.

From the EDITOR.—La Revue Scientifique for January, 1872.

From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris, June and July, 1870.

From the EDITOR.—The Mining Magazine and Review, No. 1, January, 1872.

From the SOCIETY.—Archives of Science and Transactions of the Orleans County Society of Natural Science, 3 Nos., vol. i.

From the MUSEUM.—Annual Report of the Trustees of the Museum of Comparative Zoology at Harvard College, U.S., for 1870.

- From the ASSOCIATION.—Proceedings of the Geologists' Association, No. 3, vol. ii.
- From the AUTHOR.—Ancient Earth Forts of the Cuyahoga Valley, Ohio; on the Weapons and Military Character of the Race of the Mounds; Ancient Mining on the Shores of Lake Superior, by Colonel Charles Whittlesey.
- From the SOCIETY.—Proceedings of the Asiatic Society of Bengal, Nos. 9, 10, 11; Journal ditto, Part i, No. 11. Part ii, No. 3.
- From the SOCIETY.—Mittheilungen der Anthropologischen Gesellschaft in Wien, Nos. 12, 13, and 14.
- From the SOCIETY.—Jahrbuch der K. K. Geologischen Reichsanstalt, July, August, and September, 1871; Verhandlungen, ditto, No. 11, 1871.
- From Professor A. ECKER.—Archiv für Anthropologie, 1871.
- From the EDITOR.—Correspondenz-Blatt der Deutschen Gesellschaft für Anthro. Ethno. und Urgeschichte, No. 1, 1872.
- From the SOCIETY.—Schriften der Königlichen Physikalisch-ökonomischen Gesellschaft zu Königsberg, 2 Nos., 1870.
- From the EDITOR.—Nature, to date.

Lieut.-Colonel GEORGE GRANT FRANCIS, F.S.A., exhibited a series of Bone, Flint and other Stone Implements from Paviland, Gower; and contributed the following remarks thereon, which were read by the Director.

Stone Implements, etc., from Paviland, Gower.—Specimens of flint and other stone implements more or less perfect:—Bone implements; human bones; concreted portions of the cave deposit, Samian ware, a fragment of which last was found with a third brass of Constantinus, *above* the floor of stalagmite.

The bones and implements were all found intermixed *beneath* an irregular thick floor of stalagmite in a stiff redish loamy soil, from which they were carefully cleansed by myself at Swansea, and soaked in liquid gelatine to prevent exfoliation, and indeed entire destruction, and many of them have since been dipped in boiled oil with the same intention.

Dr. Buckland has particularly distinguished the Cave of Paviland in his "*Reliquiæ Diluvianæ*,"* and "the Gower Caves" form an interesting chapter in the palæontological Memoirs of Dr. H. Falconer.†

The former could not and the latter author did not give Mr. Gwyn Jeffreys and myself any credit for the discovery and preservation of these valuable relics of a bygone period. They were excavated by us in the autumn of 1835, and having been placed in the Swansea Museum, are noticed in the "*Institution Reports*" (copies in library of Society of Antiquaries) for 1835 and 1836, and were labelled in the usual way.

* 4to. 1823. Pp. 82, 164, 167.

† Roy. 8vo 18—. Pp. 521, 538.

The following is the extract from the *Memoirs* relating to the find:—"In May, 1862, Lieutenant-Colonel Wood and myself (Dr. Falconer) had found numerous wrought flints and some bone weapons in Paviland, but the deposits there had been so disturbed by previous excavations of an old date that none of the instances were free from the taint of suspicious occurrence."

If the learned palaeontologist or his friends had made a proper search in the Swansea Museum (to which he makes frequent reference) he would have found the collection now forwarded with the names of the finders, and reference to Mr. Jeffreys or myself would have placed the question of disturbance on its true basis, viz., that the flints, &c., found in "1860" were the rejected of our work in 1835.

DISCUSSION.

Mr. HUGHES said that, although there might be quite sufficient evidence of the agency of man in the manner of occurrence of the flints exhibited, as it would be shown that they occurred in the cave under such circumstances that they could not have been selected and carried to the position in which they were found by the ordinary operations of nature, still he would point out that there was no evidence of human workmanship on the specimens themselves, all the forms being such as commonly resulted from the natural fracture of flint, which, however, when found serviceable, were selected, and often imitated by man.

The following paper was read:

On the HEREDITARY TRANSMISSION of ENDOWMENTS and QUALITIES of DIFFERENT KINDS. By GEORGE HARRIS, Esq., F.S.A., Vice-President of the Anthropological Institute.

It is my desire on the present occasion to institute an inquiry, and to call attention to the mode of transmission in various ways, not only of actual talent or genius, the hereditary descent of which has been discussed in a very able and interesting work by Mr. Galton,* but also of endowments and qualities of different kinds, physical and moral as well as intellectual, and the observation of each of which appears to me calculated to throw light on the other. Mr. Galton's work is especially valuable as regards the mass of well-authenticated facts which he has brought together, however we may differ from some of the conclusions at which he has arrived. It is my intention, however, in the present paper not so much to follow Mr. Galton in his track as to take up the subject where he has left off, and to attempt to effect researches beyond the line to which he has limited his inquiries.

* "Hereditary Genius: an Inquiry into its Laws and Consequences. By Francis Galton, F.R.S., etc. London: Macmillan and Co.

Of the fact of the actual transmission of endowments and qualities of various kinds from parent to offspring, few will entertain any doubt, whatever doubts may be felt as to the mode of the transmission, and the extent to which this is effected. The question then arises from which of the parents are these characteristics mainly derived, from the father, from the mother, or from both parents? And are particular endowments and qualities inherited principally from different parents? In several remarkable cases the derivation of intellectual talent has been traced to the mother; but in other cases it has been clearly from the father that the faculties in question were transmitted. In a great many instances—the majority, I believe—it will be found that the endowments and qualities of both the parents have been transmitted to the children, although in different proportions, to various members of the family. In several cases it has been observed that persons inherit remarkable qualities, intellectual and moral as well as physical, from the grandparents instead of the parents. In the case of disease this principle has long been recognised. And may not the hereditary descent of diseases, which has for some time been carefully observed, afford us a guide to trace out the mode of the descent of intellectual and moral endowments and qualities, which has escaped, or at any rate has not secured, a corresponding amount of observation?

It is obvious, however, that endowments and qualities of different kinds do not by any means always directly and lineally descend. As the offspring are in each case derived not from one only, but from two parents, something may be supposed to be derived from each, which will of course be more or less modified by the character of both parents. In addition to this, endowments and qualities of each kind appear to be transmitted in various ways. In some few cases a particular talent or quality descends direct from one of the parents to one of the offspring without undergoing any change. In other cases the talent or quality is so transmitted, but an entirely new direction is given to it by the new possessor, as when the son of a great painter comes out as a poet, or the son of a distinguished mathematician is eminent as a lawyer.

One very remarkable peculiarity about the descent of both endowments and qualities, and also physical peculiarities as well, of which I could adduce some striking instances, is the case where the qualities of both the parents are as it were split and divided among the offspring, one child inheriting one quality, another child another quality, of one or other of its parents. Thus, one child will possess the taste, another the originality, another the acuteness, of one or other of the parents, while he will be wanting in the other capacities peculiarly exhibited by

them. So also, as regards the moral qualities and dispositions of the parents, it may be observed that these are also occasionally in a corresponding manner as it were split and distributed singly among the different members of the family. For instance, one child may be remarkable for the energy, another for the courage, another for the honesty, another for the benevolence, which peculiarly characterised one or other of the parents, while he did not possess to any large extent any of the other qualities. The same may be observed with regard to the transmission of deficiencies from the parents to the children. Professor de Quatrefages, in his valuable work on the progress of anthropology, has pointed out something analogous to this in the case of animals of cross-breeds, some of whose progeny will exhibit the breed of one parent, some that of the other. Indeed, in many respects and in various ways, but particularly as regards the transmission of qualities from parent to offspring, the study of natural history is calculated to throw much light upon the study of man. Botany, too, may be made serviceable in this respect.

As regards the descent of physical qualities of different kinds, this is far easier to trace than is the transmission of those which are intellectual and moral. Any person is capable of perceiving the likeness of a child to one of its parents, and the disposition of particular children to particular diseases of one or other of the parents is also perceptible. The latter is especially the case with regard to insanity. It is also well known that diseases in their transmission will miss a generation and re-appear in the grandchildren. This mode of the descent of physical qualities which are perceptible, may afford us an insight into the theory of the transmission of those which are intellectual and moral, and which are not obvious to any but very attentive observers.

The fact indeed of the resemblance of a person to an ancestor, whether parent, grandparent, or more remote relation, may afford a correct insight as to the hereditary transmission of qualities. I have known two instances of persons bearing a striking resemblance to very remote ancestors, whose portraits were well known. In other cases a near resemblance may be perceived to collateral relations, uncles, aunts, great uncles, great aunts, and cousins. May we not suppose that endowments and qualities of different kinds manifest themselves among the different descendants and other relations of a person possessing a remarkable talent or disposition to a great extent? In the case of animals of a cross-breed the tokens of the mixture will appear in very remote generations, when by subsequent breedings it might be supposed all trace of the original cross would have been lost. In the case of man, where a marriage with one of quite a different blood—a mulatto, for instance—has taken place, a com-

paratively remote descendant will occasionally exhibit a striking resemblance to his mulatto ancestor, although the intermediate ancestors exhibited no strong traces of this relationship. In this instance, moreover, some or one only of the children of the particular family will be marked in the way alluded to, while the others will be without any traces of this description.

The colour of the hair affords also a striking indication of the mode in which qualities descend from parents to children; one child will have hair of the colour of that of the father, another of that of the mother, while the hair of the other children will resemble in colour that of one of the grandparents, great grandparents, uncles, or aunts. In some instances no resemblance to the hair of any of his relations is perceptible. In a manner closely analogous may be the transmission of endowments and qualities in general, whether physical, moral, or intellectual.

It may not unreasonably also be supposed that the particular physical, moral, and mental condition of the parents at the time of procreation may have extensive influence on the character of the children, and may account for the extensive diversity among children of the same family. So events happening at the time of the conception of the child and the particular pursuits of the parents may have great influence on the character of the children. Also the comparative age of the parents may have its effect in this respect, high-spirited children springing from parents who were young and vigorous, children grave and sedate from elderly parents.

In the breeding of certain animals great care and skill are exercised in so uniting particular qualities that the offspring may be endowed with those of the most valuable kind. May there not be certain mental and moral qualities in the human race which, when they are possessed by the parents, may lead to the production of offspring in whom are united a class of qualities most valuable to be found together? Indeed, most of the value of many endowments depends on their coexistence in the same mind.

Another inquiry of much interest, and no less importance, is as to whether artificial acquirements as well as those which are natural, can be, or ever are, transmitted by parents to their offspring. Many facts have been cited to prove, especially in the case of animals,* that they can be, and frequently are.

The most extraordinary circumstance, however, connected with the hereditary transmission of endowments and qualities of different kinds, and the most difficult to afford any satisfactory explanation of, is the case which not unfrequently presents itself of a direct contrariety being observable between the cha-

* "*Intelligence and Perfectibility of Animals*", by Leroy.

acter of one or both of the parents and that of one or more of the children, not only moral but intellectual. We sometimes observe that robust children have sprung from weak parents, and occasionally, when both the parents are above the common stature, some or all of the children will be considerably below it. The same contrariety is also presented with regard to moral and intellectual disposition and capacity. Thus parents remarkable for their piety and probity occasionally produce children some of whom are as remarkable for their impiety and dishonesty. It has been urged that a neglected or injudicious education may be the main cause of the failing alluded to. But in these cases there has been evidence not only of the bad conduct, but the decidedly bad disposition of the child, directly contrary to that of the parent. And in cases where every effort has been made by education and moral training to counteract the evil disposition, the same conduct has been evinced. Besides this, where all the members of the family have received the same training, some of them only have gone wrong.

The case of the virtuous children of parents who are thoroughly vicious and ill-disposed is still more remarkable. In these instances education and example have done all in their power to corrupt the minds of the offspring, and to render them as degraded as those of their parents. Good disposition and industry and inclination to virtue have nevertheless manifested themselves, and have overcome all the obstacles which bad training presented; and the children have grown up to be as great a benefit to society as the parents were a bane. The only influence upon the children at all calculated to be beneficial, but which is wholly insufficient to account for the contrariety in disposition pointed out, is the disgrace and ruin which the ill-conduct of their parents brought upon them and their families.

But the occasional instances of contrariety in intellectual as well as in moral character between parents and children are not less remarkable. It has long been a matter of observation that the son of a man of genius is frequently below par in point of capacity. And perhaps quite as often the man who is below par produces a son who is a decided genius. In the majority of instances, indeed, distinguished men will be found to have sprung from parents who were only of average capacity. In these cases it may be said, as already observed, that they inherited their talent from some gifted ancestor. Be this as it may, what I now wish to remark upon is the striking and undoubted fact that a direct contrariety as regards their comparative amount of intelligence and capacity is frequently exhibited between parents and children. Further than this, there is very often to be observed a corresponding contrariety not merely as regards the amount of

capacity possessed by the parents and children respectively, but as regards the peculiar quality of it. Thus the sons of a man of exquisite taste will evince no turn of mind of that kind, but will show a capacity for mathematics. And the children of a great mathematician will be wanting in this respect, but possess tastes the most refined. How are all these direct and sudden contrarieties, physical and moral as well as intellectual, to be accounted for?

It appears to me that the only true and philosophical mode of explaining the peculiarly interesting phenomenon in question is by resorting to the supposition that there may be existent in our constitution certain operations and influences analogous to or corresponding with those of tide or reflux, exhaustion and repletion, action and reaction, wearing out and revivifying, in the natural world, ever in process as regards the origination, development, and growth of our moral and intellectual qualities and endowments as well as in the properties of our physical frames, which possess a never-failing influence as regards the transmission of these qualities, and their manifestation in the offspring in the various ways which I have endeavoured to point out. Thus a particular moral or mental endowment may go on growing for generations until it reaches its climax, when it will at once decline.

Subjects of this kind must possess a deep interest for every philosophical inquirer, although unfortunately, mortifying as may be the confession, more especially as regards the highest of them, speculation is the utmost that we can effect in our efforts to unravel the mystery. By some scientific men, indeed, speculation is condemned as unsatisfactory in its results and unscientific in its mode of proceeding. But to condemn speculation is to condemn the greatest and most ingenious philosophers to whom science is indebted, and in not a few instances the more uncertain and apparently wild were their speculations the richer and more solid have been the fruits which those speculations ultimately produced. To condemn speculation in philosophy is to censure alike Des Cartes, and Hobbes, and Behmen, and Newton, and Locke, and in truth nearly all the originators of everything that is most valuable in science, physical, moral, or intellectual. To forbid speculation is to take away the scaffolding by means of which the rising edifice is erected, and at once to put an end to instead of accomplishing its completion.

DISCUSSION.

Dr. COLLYER remarked that he had seen on the western coast of Mexico, in the state of Jalisco, whole tribes of men whose bodies were spotted, known as "*los Pintos*." These were Indians, with the

brownish red skin, on which were indigo-coloured spots of various sizes, from that of a sixpenny piece to that of half-a-crown. General Alvares, himself an educated Indian, informed him that these spotted people had a tradition that it arose from the period of a volcanic eruption some five hundred years since, he supposed on the principle of *mental impression* of the mother, or vital photography, being conveyed to the body of the child. There were also—which deserved serious consideration—hereditary taints of insanity or abnormal cerebral function, and were transmitted from remote ancestral abuses of the laws of nature or arising from defective organization, as in idiocy. What made them so remarkable was their *suspension* from active manifestation for one or more generations; then from some exciting cause the original abnormality will again crop out from the latent condition. The proximate causes of hereditary peculiarities mostly arose from the state of mind (nervous system) and the health of the body generally of the parents during the procreative function; those unquestionably materially influenced the future offspring. Education so essentially modified the brain's condition, even in the lower animals, that the offspring came into the world with a predisposition to certain talents, as was shown in thorough-bred dogs and horses. The limit to this perfectibility was always in relation to the special organisation of the animal. If time would admit, it would be in his power to show how genius and other specialities are oftentimes of a most remote origin, implanted by some one in our ancestral line, which only required to be brought under favourable conditions of *excitement*, so that it might be enabled to emerge from its latent state, as in the case of gout and other diseases.

Captain BURTON thanked Mr. Harris for his valuable paper. Mr. Harris was an anthropologist, and that was saying much. But Captain Burton could not agree with Mr. Harris on any one point. The question was simply one of census. We wanted some thousand (better some hundred thousand) contemporary cases before we could make up our minds. The hospitals have annihilated the idea that the impression upon the pregnant mother influences the offspring. Captain Burton believed that a census of eminent men would annihilate all Mr. Harris's theories.

Mr. HUGHES assumed that the fact of transmission of various mental and bodily qualities and peculiarities was allowed, but it appeared to him that the subject brought forward by Mr. Harris for discussion was how to account for the admitted facts. Mr. Harris propounded the theory that there was an ebb and flow of properties in a succession of individuals—an appearance, increase, a climax, and decline of qualities, independent of external circumstances. The only argument brought forward in favour of this opinion was one drawn from analogy. Nations rose, attained their greatest, and fell; species appeared, became abundant, and disappeared. According to Mr. Harris's view, this ought to be due to some property or condition inherent in the nation or species. But such does not seem to be the true explanation. If we watch the rise and fall of a great nation, we find that, while

they have to struggle against powerful neighbours or against unfavourable conditions of any kind, mental and bodily vigour is called forth and fostered ; when luxurious habits following success produce effeminacy, a vigorous race, in the stage of growth perhaps, comes in contact with them, overthrows them, and they are gone. Nor have we any reason to believe that species would die out of themselves provided no stronger species, developed alongside of them, came to destroy them or their food, and no exceptional geographical changes rendered it impossible for them to survive. Some forms of life of simple habits, such as the plain little *lingula* or the *foraminifera*, have existed from very early times. The *cephalopoda*, on the other hand, could not hold their own with stronger carnivorous animals, and are nearly gone. So by analogy we may explain the facts observed in families. In the struggle for success mental and bodily vigour is exercised, strengthened, and transmitted. Success once achieved, luxury is too often followed by effeminacy, and the mental and bodily vigour declines.

The CHAIRMAN thought the paper a very valuable one. There was, however, one objection to it, viz., that it contained so many exceptions to the general rule ; but he (the Chairman) supposed that this was really inherent in the subject itself. There was one point to which he would allude. According to Gall, when the physical constitution is transmitted from parents to children the latter participate in the same proportion in their moral qualities and intellectual faculties. The last part of this proposition (as to the intellectual faculties) was also maintained by Buzareingues. Gall's assertion has since been disproved. It is no doubt sometimes the case, but the reverse frequently happens. It is also a fact that when children differ altogether from their parents in physique they often resemble them in their moral qualities. He (the Chairman) did not speak of his own authority, but on that of Prosper Lucas, author of the celebrated work "*L'Hérédité Naturelle*," and the authors mentioned by him.

Dr. King, Mr. J. W. Jackson, Mr. Wake, Mr. George St. Clair, and Mr. Charlesworth also joined in the discussion, and the author replied.

On the PHYSICAL, MENTAL, and PHILOLOGICAL CHARACTERS of the WALLONS. By RICHARD S. CHARNOCK, Ph.D., F.S.A., Vice-President Anthropological Institute, and C. CARTER BLAKE, Doct. Sci., F.G.S., Hon. Mem. Anth. Instit., Lecturer on Comparative Anatomy Westminster Hospital.

ACCORDING to the census of 1849 one-third of the people of Belgium speak the Picard and Wallon, and the other two-thirds the Flemish, but this does not at all establish what is the country occupied by the Wallons, which has been differently defined. We note the following from some of the best authorities : "The

Wallons inhabit the Ardennes from the Meuse in a south-west direction from Liège to Namur;” “The dwellers in the country between the Scheldt and the Lys are called Wallons;” “The most warlike of the Netherlands are said to be the Wallons or natives of Hainault and Artois;” “The Wallons are to the Vlamsch or Flemish in the Netherlands nearly the same as the Highlanders of Scotland are to the Lowlanders;” “In a more extended sense the word is applied to the inhabitants of Hainault, Namur, Luxemburg, Limburg, and a part of the bishopric of Liège, where the Wallon or old French is spoken;” “The Wallons occupy the tract along the frontiers of the German-speaking territory in the South Netherlands, from Dunkirk to Malmédy; they are located more particularly in the Ardennes, in parts of the departments of Pas-de-Calais, Nord, Aisne, and Ardennes in France, but chiefly in South Brabant, as well as in the provinces of Hainault, Namur, Liège, and in the greater parts of Luxemburg, and finally in some towns and villages in the neighbourhood of Malmédy, in Rhenish Prussia.”* A modern French writer (Xavier?) says, “The word Wallon is a name given to the inhabitants of the southern provinces of Belgium who speak the idiom termed Wallon or old French, which some regard as a remnant of the Gaulish. The limit which this language does not pass is indicated, towards the north, by a line from Calais to Verviers or to Limburg, by Saint Omer, Lille, and Tournai.”† So much for their habitat. The great centre of the Wallon nationality, though it is by no means in the centre of the Wallon district, is at Liège. Here the people still speak almost wholly Wallon; here more has been done than in any other part of the Wallon country to promote the study of the language; and here are printed nearly all the works in the language.

The Wallons are called Walsche by their neighbours the Germans, Walen by the Dutch, and Walon by themselves. The Flemish nickname them Fransquillons. The appellation Walon is said to be derived from the old German word *wahle*, a foreigner. *Wahle* would first become Wal (whence the plural, *Walli*, *Galli*),

* Chambers.

† Lamartinière says : “On donne le nom de Wallon à tous les peuples de Pays-Bas dont le langage ordinaire est un vieux Français, comme dans l’Artois, dans le Hainault, dans le Luxembourg, dans une partie de la Flandre et du Brabant. Quelques uns y comprennent même le pays de Liège, à cause qu’on y parle un Français corrompu.” According to Bouillet, “on nommait Wallons ainsi jadis les habitants de cette partie des Pays-Bas où l’on parlait l’ancien Français dit Wallon, que l’on croit dérivé du Gaulois (appelé *Waal* en Hollandais). Le pays *Walon*, au N. et à E. de la Flandre Française, comprenait la plus grande partie de ce qui forme aujourd’hui la Belgique, savoir les Flandres occidentales et orientales (dites ensemble *Flandre Wallonne*). La province de Namur, le Hainault, le pays de Liège, le Limbourg, et même le Luxembourg.”

and finally Walen, Walon. The Wallons (whose number in Belgium, where they are principally located, is put down at one million and three quarters) are the descendants of the old Gallic Belgæ, who held their ground in the Ardennes mountains when the rest of Gaul was overrun by the German conquerors, but who became eventually Romanized, especially in their language.

The Wallons are tall, somewhat slender, raw-boned, and strong. The hair is dark, the eyes fiery, dark-brown or blue, and deep sunk.

Dr. Beddoe, in a paper on the "English," after referring to the fact that there is a preponderance of dark hair and eyes in the towns as compared with the rural districts, remarks, "The phenomenon repeats itself in Belgium and Germany in a more striking manner. Thus at Antwerp, Louvain, Huy, Cologne, Düsseldorf, Münster, Aachen, Brunswick, Leipsic, and even at Prague, I have found the citizens darker than the peasantry; and if the contrary is the case at Vienna, and perhaps at Liège and Namur, both cases are easily explicable; the Liégeois peasantry is like a Wallon promontory in a Teutonic sea, and the Viennese are mostly Germans." The same author, working independently of Dr. Wilson, and in a different manner, says "he had educed the same conclusions, which have since been confirmed by further investigations, including a few upon Swedish, German, and Wallon heads, and moreover by a visit to Rheims, where, in the elaborate sculptures of the monument of Jovinus, he had the satisfaction of beholding the same marked features, square forehead, prominent brows, and angular chin, which almost equally to the present day characterize the Belgic Kelt of the Continent and the Firbolgian of Arran." Dr. Beddoe illustrates the last conclusion as follows: "Length of face varies like length of head, but is generally considerable. In the Firbolgs of Arran, and in many Wallons, it is conspicuously great." "Ten Wallons from the province of Namur, as representatives of a race more or less Keltic in blood, gave a cranial index of 77.6. So far as the skull serves to indicate affinity, the Wallons may be said to be only less Keltic than the population of Wiltshire, West Somersetshire, and counties Cork and Kerry. Their cranial modulus precisely accords with that of the Kerry men."

The ordinary Wallons stand in a similar relation to Belgium as that which the Irish peasant does to the "Sassenach" of England. They are poor, jovial, good-natured, superstitious, chaste, hospitable, quarrelsome, violent, and generous, like the Irish, and thus evince their Keltic descent. They are tough, rough, and hardy, and make excellent soldiers. The Spanish armies in the Pays-Bas were made up of Wallons. As evidence of their peculiar character, a Wallon will drag a pig from Namur to Ghent, and even to Bruges or Antwerp, in order

to gain a few sous more than he could in his own district. A modern writer* says of the people: "The Wallons of the present day resemble their French more than they do their German neighbours. They surpass the Flemish in adroitness, activity, and skill, and the French in earnestness, perseverance, and diligence. In impulsiveness they resemble the latter more than the former, but their anger sooner cools than with the more deeply-feeling Fleming. It is worthy of notice that the Belgian revolution was pre-eminently the work of the Wallon districts, and that the most eminent of the modern statesmen of Belgium are of Wallon descent. It was against the Wallon spirit and tendencies that the Flemish movement was chiefly directed." A special mental and moral character may be predicated of the Wallons of each district. "Those of Liège" (says Duvivier) "are very lively, spiritual, and laborious; those of Namur, on the contrary, are proud and coarse. The Wallons of Upper Pomerania are said to stand lower than even those of Namur. Among the Wallons of Liège even the women are renowned for their strength, industry, and energy. Like the men, they do the hardest kind of work, as coal-drawing and towing the Meuse boats, and the Germans style Liège '*Hölle der Frauen*' (the womens' hell)." It is remarkable in what a quiet and unobtrusive manner this people have spread themselves over the continent. Like the poor Savoyards, many Wallons from the Ardennes go on foot to Paris. In the German towns on and near the Rhine, as at Cologne, Trèves, Aix-la-Chapelle, and Düsseldorf are little colonies of Wallon handicraftsmen, here called *Wälsche*. In 1843 they numbered 200 in Krefeld. There are also small colonies at Amsterdam, Rotterdam, and Utrecht. In the first-named town is also a Wallon (*i.e.* a Roman Catholic) church. The Wallons of Cologne are much praised for their perseverance and energy. They go on ploddingly and conscientiously, and, as a rule, are able to accomplish any kind of work that can be done by the natives. Like the rest of the people of Belgium, the Wallons are ardent, even ultramontane Roman Catholics. A Protestant church exists at Liège in one of the back streets, but there is no congregation.

The Wallon dialect must not be confounded with the Rouchi, spoken in what was formerly French Hainault, and in a part of Belgic Hainault, as far as Avesnes and Maubeuge, called *Pays de Lauvan*, because *Lauvan* is used for *là-bas*.* The Flemish language is much mixed up with French, and has borrowed many words from both it and the German. A large portion of it sounds in French ears like German jargon. "But," says a German authority, "the mixing of the Flemish with the French is otherwise than that of

* Chambers.

† *Conf. Hécart.*

the Wallon with the German. In the Flemish the ground-physiognomy of the language has remained the same as the old German, but is here and there somewhat French. In the Wallon, however, the German is quite flesh-and-blood forced into it, and has altered the . . . of the language. Many of the words have als . . . the French and German languages, not after the French, but after the German manner, thus :—

FRENCH.	GERMAN.	WALLON.
Épicerie,	spezerei,	spesserie.
Épinards,	spinat,	spina.
Capuchon,	kapuze,	kapuss."

Again, German scholiasts assert that above one-third of the words in the Wallon are of German origin.

Notwithstanding all that has been written on the subject, we think that the base of the Wallon is the old French, a language derived from the Latin and the ancient Keltic. There are indeed more Keltic words preserved in Wallon than in any of the French dialects. It has many from the German, and a few from the Netherlandish and Spanish. Whether or not the Wallon dialect contains any remains of the ancient Scythic language we are not aware, but Herodotus gives the Scythic word *spu* for both a "fountain" and an "eye," and the name *Spa* may be etymologically connected therewith.* Singularly enough, the same word is found both in Hebrew and Chinese for both "eye" and "fountain," and like resemblances occur both in Persian and Greek.

The Wallon dialect is rich in metaphors, witty, in expression boldly figurative, and is full of onomatopœias, arising from a vulgar mimicry which is untranslatable. *Generally speaking*, we may say that the Wallon is a spoken, but not a written, language. The pronunciation differs in different localities, and such are the modifications of accentuation that almost every village has its own manner of expression. Even at Liège the pronunciation varies to some extent in different quarters, and an inhabitant of the left bank of the Meuse knows one of the right bank by his drawling pronunciation. In other parts of the Wallon district the difference is still greater; thus, in a part of the ancient marquisate of Franchimont *mohonne* is pronounced *manhon*; *femm*, *famm*; *drap*, *drèp*.† To the west of Liège, as at Ans, the pronunciation differs also. Here they usually substitute *â* circumflexed for *a* simple; thus, *effanse* is pronounced *effâ*. On the other hand, in Outre-Meuse the pronunciation is harsh, rough, and guttural; as *colank* for *colon* (pigeon); *St. D'nik* for *St.*

* Σπου τὸν ὀφθαλμὸν καλεῖσιν. The Liège word *sipité*, *spité*, is rendered "jaillir", "sauter".

† Conf. Henaux.

*D'ni*h, &c. At Liège and in its environs they express "yes" by *awe*, which is uttered with a sharp sound. In Franchimont it is *oyé*, pronounced slowly; at Verviers they drawl out *aye*, in Hesbaye *oyé*, and in Condroz *ayé*. This distinction is ancient, being recorded in documents of the fifteenth century. The Wallons emphasize a good deal; the vowel *u* has more the value of the German *ü* than that of the French *u*. This often produces a harsh, whistling sound. The alphabet contains the German letters W and K (as well as C), which the French has not. Thus *wazin*, for *voisin*; *kimin*, *kmin*, for *comment*; *kinoh*, *knoh*, for *coin* and *corne*; *Walzin*, name of one of the chateaux near Dinant. K takes the place of *q*, as *kwan* for *quand*; *ké*, *kél*, for *quel*, *quelle*; and *w* for *g*, as *wan* for *gant*; *wér* for *guère*. The following will give some idea of the ordinary Wallon dialect:—

WALLON.	FRENCH.
Lessai,	lait.
Lâmm,	miel.
Thier,	mont.
Pôk,	peu.
Mutoi,	peut-être.
Chivâ,	cheval.
Aiw,	eau.
Tiess,	fête.
Bok,	bouche.
Pi,	piéd.
Nûte,	nuit.
Jou,	jour.
Pehon,	poisson.
Ipon,	c'est possible.
Atech (attache?)	épingle.
Amagnî,	manger.
Ehiedé,	chaud.
Fièr or fiàir,	fer.
Solo,	soleil.
Nareinn,	nez.
Vein,	vin.
Rog vein,	vin rouge.
Blan vein,	vin blanc.
Pourçai	cochon.
Handel or hâdel,	marché.
Sipet,	épais.
Freu,	froid.
Som mi âmm,	sur mon honneur.
Mezâh,	besoin.
Todi,	toujours.
Pire,	pierre.
Berbi,	mouton.
Ognai,	agneau.

We give the following version of the Lord's Prayer in the Wallon dialect of Liège:—*

* See Chamberlayne, "Oratio Dominica". 4to. Amsterdam, 1715; Adelung, *Mithridates*.

“Nos Peer, ki es a cir, vos sen no seûye santifi; vos roame nos adveigne; vos volte seûye faite, et Ter, kom a cir; Dine no ajourdou nos Pan quotidien; pardone no nos ofence, kom no le pardonan a ciki nos on ofencé; ni no duhé nen diven de tentacion; mai dilivre no di to ma. Ensi seûye ti.”

We will now make a few remarks on the dialect of Liège, and for further information will refer to the interesting works of Simonon and Henaux. The dialect of Liège is distinguished by its vivacity, the richness of its figures, and its sonorousness, which is quite the reverse in the dialects spoken in other parts. This dialect is in fact not only superior to the others, but also to all the patois of France. The grammar of the written dialect of Liège is not always the same as the spoken language. It has to a certain extent retained the ancient pronunciation of the letter *s*, which has been suppressed in modern French, thus: *chestî, mestî, prûstî*; in French *chateau, métier*, etc. The patois of Liège has eighteen masculine terminations, viz., *a, â, an, é, ain, in, è, é, i, î, eû, eun, o, ô, on, u, û, ou, où*. The adjective generally precedes the noun, which is the same both in the plural and in the singular. Adjectives in the plural placed after their nouns are the same both in the plural and the singular, but in those placed immediately before their nouns the adjectives in the masculine gender take a *z* in the plural, but only when they commence with a vowel. In the feminine they take an *è* in the plural before nouns which commence with a non-liquid, and *éz* if they commence with a vowel or a liquid. The three persons of the verb have generally the same termination. Besides the ordinary imperative there is a more energetic form, which is used with the auxiliary verb *alé* (*aller*); thus, *va mañt, va jowé, val kweri* (va manger, va jouer, va le chercher) become, in the energetic imperative, *vas' mañ, vas' jow, vaz el kwîr*.

The Wallons are poetical, rich in song, and fond of the dance. They have many fine old national songs and peculiar chants, which the children sing, and which bear no resemblance to those of France or Germany. These songs are still composed in Wallon. In the suburbs of Liège and other Belgian towns the Wallons often dance upon the high roads with linked hands (German *Reihen-Tänze*, French *Chansons de Ronde*). They dance round the acquaintances they meet, singing at the same time lively and satirical songs which the Germans call *spottliedern*. The Wallon dialect is well adapted for wit and jest.* Some of these songs are launched against the Germans, others against the French. The Wallon proverbs or *spots* are remarkably concise. Dejardin

* Conf. Meyer.

has published an exhaustive work on the subject. The following are examples from the latter author:—

Les calins n'ont qu'on timp. Litt.: Les méchants n'ont qu'un temps. Le triomphe des méchants est de courte durée.

Il n'fût nin achter on chet d'rin on sèche. Litt.: Il ne faut pas acheter un chat dans un sac. Conclure un marché sans connaître l'objet dont on traite. (*Acad.*)

The eighteenth century is considered to have been the era for the Wallon language. At this period were printed several operas, comedies, hymns, patriotic chants, cantatas, and erotic and sportive poems. Scarcely had the century commenced when Lambert de Rickman satirized the thermal and mineral waters of the country in his poem entitled “Les aiw di Tonk.” This was followed by the “Pasqu’ee Critique et Calotene so les Affaires del Medicine,” a long, amusing, and elegant composition of an anonymous writer. Towards 1757 followed dramatic pieces entitled “Si Ligeoi egagi,” by J. J. Fabry; the “Ypocontes,” by S. de Harlez; “Li Voögge di Chofontaine,” by de Cartier; “Li Fiesse di Hoûte-si-Plou,” by H. G. de Vivario. To these poems, which were held in great esteem, the learned Jean Hamal composed the scores, which were afterwards found worthy of the praises of Grétry. There are many unpublished manuscripts in the language.* The Liège word *sipo*, *spo*, is rendered “proverb,” “façon de parler figurée.” It may, however, be etymologically the same as the German *spott*, mockery, scorn. Some of the geographical names in the Wallon district may be traced to the French; others to the German, Keltic, and Wallon. Such names as Hève, Serè, Teux, Tif, and Toneq are said to be pure Wallon. The termination *ter* signifies “habitation,” and *cie*, which is always joined to the name of the proprietor, or the object, as in Geraidreie, Hermeie, Joupeie, denotes “habitation” or “street.”

The following authors may be advantageously consulted on this subject:—Cambresier, R. N. J., “Dict. Wallon Français,” Liège, 1787, 8vo.; Dejardin, Jos., “Dict. des Spots des Wallon,” Liège, 1863, 8vo.; Dom, Jean François, “Dict. Roman, Wallon,” etc., Bouillon, 1777, 4to.; Duvivier, “Wallons;” “Grandgagnage, T. C. J., “Vocabul. des Noms Wallons des Animaux,” etc., Liège, 1857, 8vo.; Henaux, Ferd., “Études Historiques, etc., sur le Wallon, Liège, 1843, 8vo;” “Les Omnibus Wallons, ou Recueil des Locutions Vicieuses,” Namur, 1864, 8vo.; Meyer, Grosses Conversations Lexicon;” Remacle, L., “Dict. Wallon Français,” Liège, 1857, 8vo.; Simonon, C. W., “Poésies en Patois de Liège, précédées et suivies d’un Glossaire,” Liège, 1845, 8vo.; “Wallonades: Poèmes, précédées par une Introduction par Alfred Nicolas,” Liège, 1845, 8vo.

* Conf. Simonon.

The following paper was read :

NOTES *on the WALLONS.* By JOHN BEDDOE, M.D.

MY ideas respecting the Wallon physical type are founded upon observations made at Liege, Huy and Dinant, and in smaller number at Verviers, Namur, Givet, and Mezieres-Charleville. Altogether, I took note of the hair and eyes in about 1400 people, but of the measurements of the head in only ten, who were inhabitants of Dinant and the neighbourhood. The description of the Wallon type given in the paper by Drs. Charnock and Blake accords very well with my own opinion. It differs very markedly from the forms prevalent in Flanders and Brabant, Westphalia and the Lower Rhine ; in fact, few ethnological frontiers in Western Europe, I suppose, are better marked than that of the Brabançons and the Wallons, which is crossed by the traveller on his way from Mechlin, Louvain, Landen, and Tirlemont, to Liège, notwithstanding that Liège has long been a great commercial and manufacturing centre, and swarms with strangers and descendants of foreigners, whose presence tends to obscure somewhat the true local type. At Verviers, a little further east, and more among the hills, the type I speak of comes out still more strongly, and the dark, or even coal-black hair of the peasants, their square foreheads, high cheek-bones, aquiline noses, and pointed chins are very conspicuous. Not many miles further, again, as one quits the hills and enters the open country about Aachen, both features and complexions change again, and remind one of those left behind in Brabant, though with certain shades of difference.

To my eye this hatchet-faced Wallon type is fundamentally the same which prevails throughout the whole north of France, from Rheims to Dieppe, though it may be most boldly and strongly marked in the Ardennes. It is the same which William Edwards called *Kimric*, and which Broca and other French anthropologists connect with tall stature and light hair, contrasting it in these and other respects with the dark, short, round-headed type of central and southern France. It abounds in Northern Italy, is pretty common in Brittany and Cornwall, and seems to constitute an element of more or less importance in the population of most parts of the British Isles. But whether there be any good ground for connecting it with a light complexion and fair hair I very much doubt. Light hair is indeed more frequent in the north-east than in most other parts of France ; and it is in the north-east that the *Kimric* type prevails ; but even there, if we adopt the nomenclature of colours which any Englishman would employ, the bulk of the population is dark-haired. The fact is (and I have repeatedly had occasion to recall it to notice) that people's ideas about hair colour differ

more widely than is generally supposed. Observers belonging to a country or district where any particular hue is rare, will be found usually to exaggerate the prevalence of that hue among the people whom they observe. Thus Worsaae, coming from Denmark, where black hair is rare, talks of the dark hair of the southern English, while Frenchmen almost always think and speak of us as a blond-haired people. It will not do, therefore, to reason from a collation of the observations of several persons, as is often done in this matter of hair-colour, unless indeed some such plan as Broca's has been adopted, for reproducing accurate ideas as to the facts.

To resume. We have in the Wallons a population which may be roughly described as long-headed, long-faced, and dark-haired. To the east of them, in the Rhineland, are the Germans, broad-headed, and comparatively light-haired. To the north and north-east the Flemings, Hollanders, Frisians, and Westphalians, all light-haired, and tending on the whole to be broad-headed, such tendency, however, being less marked in the Frisians, and perhaps in the Flemings, than in the others. To the south-west, in the plain-country of northern France, is a people much like to the Wallons in colour and frame of body, and probably also in form of head. But as we proceed westward to the Seine and beyond it, the hair lightens while the Norman impress strengthens. I need not enter into the subject of the distribution of hair colour on this side of the channel.

I regard the Wallons, then, and their hilly, wooded, and difficult country, as a Kimric or Belgic cliff, against which the tide of advancing Germanism has beaten with small effect, while it has swept with comparatively little resistance over the lowlands of Flanders and Alsace, and penetrated into Normandy and Lorraine. I look upon the colour of the hair as a tolerably good index of the proportion of German or Scandinavian blood, inasmuch as it seems to lighten wherever that proportion increases, in France as well as in England or Ireland.

It would be uncandid, however, to omit mention of certain points which seem to favour the view of Professor Huxley, who thinks the Kelts, Belgæ or Kimri, were the first wave of this Germanic tide, and a fair-haired people. The late Prof. Spring of Liège, with whom I discussed the physical type of the Wallons, spoke of them, so far as I can recollect, as long-headed, with oblique eyebrows, high cheek-bones, prominent brows, and angular chins; but he did not recognise the long face and aquiline nose as a part of the true Wallon type, and when I drew his attention to some faces which displayed *my* Wallon type very strongly, he said they were doubtless common, but he thought they were due to a Germanic cross. This I could not agree with, as to my

eye they were utterly un-German. But I must confess that I have seen faces in Friesland and in West Flanders (though not in the Rhineland), which were, except in colour, something like those of my hatchet-faced Wallons, though not quite so strongly marked. The nearest approach, then, that I can make to Professor Huxley's theory is as follows:—I think it possible that the Wallons, together with the population of the greater part of France, *may* have been constituted as a race by the crossing of a dark, round-headed Ligurian breed with a fair long-headed one, nearly allied to the modern Frisians, of whom the Cimbri of Roman history may have been the rear-guard. Such a hypothesis as this would dovetail very fairly with some of Mr. Pike's notions about British ethnology. But as the settlement in Gaul of this hypothetical xanthous Keltic or Kimric people must have been ~~very~~ ancient, I do not think the solution of the much-vexed question of the complexion of the Gauls would be at all assisted by the adoption of this view. Either changes of climate and habits have altered the Wallons and other Belgic Gauls from fair to dark-haired, since the days of Strabo and Ammianus; or else they were then, as now, in the main a dark-haired people. I confess that I am still more inclined towards the latter opinion than the former.

The meeting then separated.

FEB. 19TH, 1872.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

The following new members were announced: CHRISTOPHER BOWLEY, Esq., Cirencester; RICHARD JOSEPH NUNN, Esq., M.D., Savannah, Georgia, United States of America; EDWARD HARRIS, Esq., Rydal Villa, Longton Grove, Sydenham; JOHN EDWARD PRICE, Esq., F.S.A., 53, Beresford Road, Highbury, N.; and JAMES PEDDIE STEELE, Esq., M.D., B.A., 13, Charlotte Street, Buckingham Gate, S.W.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the ACADEMY.—Sitzungsberichte der Kaiserlichen Akademie der

Wissenschaften. Philos.-Histor. Classe, 66 Band, Heft 2 and 3; ditto, 67 Band, Heft 1, 2, and 3; ditto, 68 Band, Heft 1. Math.-Naturw., 1870, 1 Abth., Heft 8, 9, and 10; 2 Abth., Heft 9 and 10; 1871, 1 Abth., Heft 1, 2, 3, 4, and 5; 2 Abth., Heft 1, 2, 3, 4, and 5, Almanach 1871.

From the SOCIETY.—Proceedings of the Liverpool Architectural and Archæological Society, 1871.

From the ROYAL UNIVERSITY OF CHRISTIANIA.—Beretning om Sundhedstilstanden og Medicinalforholdene i Norge, 1867; Tabeller over de Spedalske i Norge, 1 Aaret, 1869; Bidrag til Lymfhekjertlernes normale og patologiske Anatomi, by G. Armauer Hansen; Generalberetning fra Gaustad Sindssygeasyl for Aaret, 1869.

From the SOCIETY.—Bulletin de la Société Impériale des Naturalistes de Moscou, 1 and 2.

From the AUTHOR.—Man, contemplated Physically, Morally, Intellectually, and Spiritually. No. 1. By J. W. Jackson, Esq.

From the Rev. W. W. NEWBOULD.—Bibliotheca Psychologica. By Dr. Gräke.

From the AUTHOR.—La Race Prussienne. By M. L. A. de Quatrefages.

The following paper was read:

STRICTURES *on* DARWINISM. By H. H. HOWORTH. PART I.—
ON FERTILITY AND STERILITY.

AMONG those who have advanced the cause of science by hard and indefatigable work there are few that can compare with Mr. Darwin; whether we consider the number of new facts he has collected, the bold and ingenious theory he has developed, or the scrupulous candour, and fairness, and sobriety of his arguments, we are all, I hope, agreed in honouring his name as a Nestor among naturalists. We are all also agreed, I hope, in the opinion that the discussion raised in Mr. Darwin's works on the "Origin of Species" is a purely scientific question in which we have nothing to do with religion, which is not to be decided by prejudices, nor by fanaticism, but which must stand or fall by its inherent truthfulness or error.

With perfect consistency and fairness Mr. Darwin has not shrunk from applying his theory to man as well as to the animal and vegetable kingdoms. If it be true of the latter, as Mr. Wallace and others hold that it is, I can see nothing but prejudice which can exclude its operation from the former, and this being so it becomes a question of vital interest to the students of our science, and not only so, but our science probably furnishes more valuable material for the solution of the problem than all the rest put together.

As I have been taken to task elsewhere for not stating the

theory of Mr. Darwin correctly, I must begin with an exposition of the opinions I mean to controvert.

I take the general theory of Evolution to be based on these propositions. No two individual objects in creation are alike, they all vary more or less from one another. If we arrange the whole in a series according to their affinity to one another we shall have a graduated series in which the variation between individuals, and the variation between classes, is one of degree, and not of kind, and if we give time and a variety of surrounding circumstances, the same causes which are competent to produce the slightest variation, may gradually produce the greatest. This law, when applied to the varieties of life, offers us the simple conclusion that all may have been derived from a common ancestor, and if we extend the analogy of individuals of one family to families of one class, and classes of one kingdom, we shall be driven to the conclusion that they not only might have been so descended, but that they actually were so. I say this may or may not be true; it underlies the whole Darwinian position, and is tacitly allowed and taken for granted by Mr. Darwin's philosophy.

Mr. Darwin's is a more particular and more limited form of this general law. In order that I may be saved from all formal questions I will put the issue as it has been put by Darwin himself in the preface to the last edition of his great book. He says then (page 4) : "In the next chapter the struggle for Existence among all organic beings throughout the world which inevitably follows from the high geometrical ratio of their increase, will be treated of. This is the doctrine of Malthus applied to the whole animal and vegetable kingdoms. As many more individuals of each species are born than can possibly survive; and as consequently there is a frequently recurring struggle for existence, it follows that any being, if it vary however slightly in any manner profitable to itself under the complex, and sometimes varying conditions of life, will have a better chance of surviving, and thus be naturally selected."

In a few words, Mr. Darwin's theory is the old-fashioned theory of Malthus pressed to its utmost limits, and is shortly, that in the struggle for existence that is going on everywhere, the weak elements go to the wall, and are gradually eliminated while the strong prevail and survive. And the question of strength or weakness is not tested solely by physical vigour, but by all the circumstances which give any type a better or a worse chance of contending with the difficulties of the struggle for life.

If Mr. Darwin had been content with this general assertion his theory would have been well described by the phrase "Sur-

vival of the Fittest" to which some Darwinians are partial, which may mean much or little. *As it stands it is simply an identical expression.* That those forms of life survive which are best fitted to survive is a truism which the philosophy of the most opposite schools would willingly adopt, for it is equivalent to saying that white is white and grey is grey.

But Mr. Darwin deals with more than this mystical phraseology, and it is easy to find an issue with him.

Having laid down his abstract proposition he proceeds to apply it to a number of cases, and it is in this concrete form that I propose to examine it. To-day I shall be content to criticize one only of its factors—namely, that physical vigour, health and strength, in the struggle for existence, have a tendency to prevail to the exclusion and eradication of weakness and debility. The bold paradox I mean to prove is that the reverse is true of the majority of cases. It will be seen at once that this paradox is the same in substance as that maintained by Mr. Doubleday in his true "Law of Population," London, 1853, a work written in answer to Malthus.

The doctrine of Malthus, to which I shall confine myself, is that in which it is maintained that Population is stationary or decreasing where food is scarce and life precarious, and that it abounds where the opposite conditions prevail, or in other words that if you starve a people, pinch them in clothing, etc., they will not increase in numbers, but gradually decrease, while if you feed them well, and house them well, your census returns will be very creditable.

We will begin by examining the general law, which is not limited in its application to man.

To begin with the vegetable world, the gardener is a good empirical philosopher. In his experience of cultivated plants he has learnt many laws which escape the field naturalist, and as one of the main objects of his profession is to make his plants bear as many flowers, and as much fruit as possible, he has probably accumulated many facts which illustrate our position. The gardener then tells us that when a tree is barren in nine cases out of ten it is so because its growth is too vigorous, and it is making too much wood, and that the surest way of making it bear more fruit is to stint it in food or water, or to injure its health, etc., and the methods adopted are very various. One way is by pruning the roots very hard, a method especially efficacious with the pear and the fig, another is to prune the branches very hard, which is generally adopted with all kinds of plants which are wanted to bloom. Another, which is a proverbial remedy in the orchard, is to ring the trees, that is, to cut a ring out of the bark so as to stop the flow of sap. Another,

chiefly in vogue in vineries, and with wall fruit, is to bend and twist the branches into as many contortions as possible with the same object. Another, again, is to turn the plants when the wood is ripe into the frost, and to keep them there a long time. All these plans are more or less efficacious. The rationale of everyone of them is the mutilation, or starving, or weakening of the tree, in order to make it fruitful. If we adopt the opposite course what is the result? Our camellias, which have set hundreds of bloom buds in the autumn, will discard them rapidly if we stimulate the plant by feeding it, or giving it heat sufficient to induce a winter growth. The buds will fall off in myriads, and leaves and branches sprout out everywhere. The same is notoriously the case with peaches; the fruit that best tests the gardener's skill and patience. Orchids refuse to bloom if supplied with food and moisture, while if allowed to dry and shrivel away to the point of death they will throw out spikes of bloom; the same is true of cacti, and in fact of all kinds of plants, I know, in a greater or less degree. But we may go further. The double flower is a distorted form produced by cultivation, *i.e.*, by abundant food and decent conditions. In the double flower the reproductive organs are altered, and often absent, and no seed is produced. Now it is curious that one of the first effects of taking our wild flowers into the green-house is to make them grow double, and cease to bear seed. Thus it is that our double garden daisy grew out of the wild daisy, and the chrysanthemum out of the ox-eye; and where the effect is not great enough to affect the flower it often affects the fruit. The coarse little shrivelled melons, cucumbers, and oranges, growing on wounded, dried up, and paralyzed branches, are full of seed; while the fleshy giants that have been well tended and fed have hardly any seed at all in them. The same is the case with grapes, and the small grape that forms the domestic currant. The green-house is notoriously a bad place to ripen seed in, and so is the highly cultivated garden. The wild kale that grows on wild exposed rocks has a few ragged hard leaves, and a thick panicle of seed; while the cabbages in our gardens hardly bear any at all.

Mr. Darwin has cited one or two cases on the other side, of which the most striking is the case of the cereals which are notoriously heavily weighted with grain, and this chiefly due, he contends, to the heavy manuring and careful cultivation they have been subject to. But the cereals are cases that I should quote to prove my own position; with highly cultivated, thickly planted wheat, there must be a terrible struggle going on for light and air with the leaves, and for food with the interlaced and thickly tangled roots of a myriad of neighbours which press

upon each individual on every side, and cause the stubble to become very matted, a very different condition from that of the wild wheat of Thibet. The same argument applies to rice, and to other crops which are planted thickly, and which, in the phraseology of farmers, exhaust the land. So far as my experience goes, the evidence of cultivated plants is decidedly overwhelming against Mr. Darwin, and in favour of my position that the weak, the ill-fed, and the pinched, are the most fertile. Our means of testing wild plants is not so great. A correspondent of *Nature* calls attention to a fact which strongly corroborates me. He refers to the notorious fact that the money worts (he might have quoted the strawberry, the ivy, or any other creeping plant equally well) will hardly bloom at all if allowed to sprawl in all directions, taking root, and therefore nourishment at every joint, while if the suckers are spread out on slabs of stone so that the whole plant has to be nourished from the mother root, it will bear abundantly. Among weeds like groundsel and dandelion, the most abundant and fertile seed is scattered by those living on the edges of the common, weakly plants rooted among stones, and in a poor soil. Beech trees growing in rich pastures ripen little mast, the husks having no kernels. Oaks and firs bear the most fruit on rugged exposed situations, or where the subsoil is poor and gravelly. So that we may infer that what is true of cultivated plants is equally true of wild ones.

Mr. Doubleday in the postscript to his second edition quotes two facts which have an analogous bearing with the preceding, namely, that grafts from a dying tree strike with far more certainty than those from a tree in full vigour, and that seeds which have been kept some time germinate in the majority of cases far more surely than those that are recent. He also says that pear and apple trees bear most profusely just before they die, and that after severe winters, of which that of 1836 and 1837 was a notorious example, grass and other vegetables grow at an immensely increased rate. All these facts point in one direction only.

Let us now turn from the vegetable world to the animal. Stockkeepers and breeders have accumulated much sound experience on the subject, which corroborates that of gardeners in regard to plants. It is a golden rule with them to keep their animals weak, and in a state of depletion, if they wish them to breed freely. Pure breeds are seldom very fruitful; they are notoriously pampered and highly fed, and when prize short-horns and southdowns are turned into coarse pastures where kyloes and mountain sheep might feel it a luxury to live, but where their round sides are speedily denuded of flesh, they breed

much more readily; the same is true of horses. Mr. Double-day quotes the case of a highly bred blood mare, which for a length of time appeared to be incurably barren, and from which the owner naturally desired to obtain a breed, rendered fertile, and ultimately the dam of a numerous progeny, by being literally put to the plough and cart, fed sparingly, and worked down to a state of extreme leanness and temporary exhaustion. He goes on to say in the sheep, however, this principle of increase or decrease is most nicely developed. It is invariably found that if over-fed sterility is the consequence. On the other hand, in accordance with the leanness of the animal a produce of one, two, or three lambs takes place. Upon their knowledge of this fact the improvers of the breed of this animal are accustomed to act. In order to afford the best chance of a perfect animal it is believed that a produce of one lamb at a birth is desirable, and this the breeders of sheep contrive to secure by apportioning the food of the ewe to such a nicety that, avoiding sterility on the one hand, and a double or triple birth on the other, a single lamb is almost invariably the offspring of the animal so limited. It is also a fact known to stock-farmers that during severe seasons, when food is scarce, most lambs are on the average produced. Mild open winters are not favourable to the increase of sheep, because during such winters grass is plentiful. Farriers, I am told, very often bleed horses and cattle which are stubbornly sterile to induce fertility.

If we turn from domestic animals to semi-wild and only partially reclaimed ones we find that the same rule applies. I prefer to quote directly from Mr. Darwin, who has on this branch of the inquiry furnished us, as he so often does, with the best materials for an answer to himself. In this case he also completely answers an opponent of mine in *Nature*, Dr. Tait, who accuses me of misreading the rationale of the evidence. "The most remarkable cases, however, are afforded by animals kept in their native country, which, although perfectly tamed, quite healthy, and allowed some freedom, are absolutely incapable of breeding." "Rengger, who in Paraguay particularly attended to this subject, specifies six quadrupeds in this condition, and he mentions two or three others which most rarely breed. Mr. Bates, in his admirable work on the Amazons, strongly insists on similar cases, and he remarks that the fact of thoroughly tamed wild animals and birds not breeding when kept by the Indians cannot be wholly accounted for by their negligence or indifference, for the turkey is valued by them, and the fowl has been adopted by the remotest tribes. In almost every part of the world, for instance, in the interior of Africa, and in several of the Polynesian islands, the natives are extremely fond of

taming the indigenous quadrupeds and birds, but they rarely or never succeed in getting them to breed." Mr. Darwin continues his illustrations of this fact through many closely packed pages, after which he adds the following commentary (see "Variation of Animals and Plants under Domestication"), vol. ii, p. 158: "We feel at first naturally inclined to attribute the result to loss of health, or at least to loss of vigour; but this view can hardly be admitted, when we reflect how healthy, long-lived and vigorous, many animals are under captivity, such as parrots, and hawks when used for hawking, chetahs when used for hunting, and elephants. The reproductive organs themselves are not diseased, and the diseases from which animals in menageries usually perish, are not those which in any way affect their fertility. *No domestic animal is more subject to disease than the sheep, yet it is remarkably fertile.*" Mr. Darwin, with equal clearness and conclusiveness, decides that this sterility cannot be due to a failure of sexual instincts, change of climate, or want of food, and he concludes that certain changes of habits and of life affect in *an inexplicable manner* the powers of reproduction. However inexplicable the manner of its operation may be, it seems to me to be impossible to evade the conclusion that the *causa causans* of the sterility is that I am arguing for in this paper—namely, a more luxurious habit, a more vigorous health, a less precarious existence, induced by the care and attention of domesticators. If we turn from domestic and semi-domestic animals to wild ones, our facts are, of course, less numerous. Lovers of birds have remarked that after certain severe winters, in which almost all the small birds have been killed off, they have been replaced in a season or two at an astonishing rate by the recuperative vigour of the survivors who have meanwhile been reduced to the verge of death by starvation. Fish that visit the sea, like salmon, do not breed when in high condition, strong with the good living they have enjoyed in salt water, but spawn when they have become meagre and thin after a long sojourn and comparative fast in fresh water. Hibernating animals breed at a season when they are reduced by their long sleep and fast to a very thin and weak condition, and we explain in the same way the much wider fact that it is immediately after the frost has gone, and before the animal world has had time to recover from its hardships that the breeding seasons begins, and so we might continue our examples. Mr. Wallace met my arguments on this point in a very Johnsonian way. I will quote his expression, and the answer I gave him, which will do equally for others who take the same view. He said that when I produced an area in which all the animals were diseased and decrepit, and the strong and healthy ones had disappeared, then he

would credit my theory. I replied that this was no fair statement of my position. That I never maintained that the toothless tiger which cannot seize its prey will be the mother of a numerous progeny. She can do nothing but die, but that as a general law the more weak and ill-fed individuals are more prolific than the strong and well fed.

Mr. Darwin met the arguments of Doubleday and others in a very different manner. He quotes a few instances which seem to tell against them, but he, too, ignores the vastly greater number he had himself quoted on the other side, a portion of which I have given you to-night. The cases he quotes are very few, and they seem to be very unfortunate. The ferret breeds well in confinement, no doubt, but then the ferret is kept in a state of extreme depletion, in order that it may be always hungry and ready to hunt. The domestic fowl, we are told, lays much more abundantly in confinement when it is well cared for than in the wild state. There is an easy answer to this—the eggs of the domestic fowl are abstracted as fast as laid, and every bird-nesting boy knows that if the same plan is adopted with wild birds that they also will continue to lay. In fact, the wilder kinds of fowl, like game, will often make a nest in a wood, or under a hedge, and it is then found that, very like the wild fowl, they lay enough eggs to form a sitting, and no more. The case of the rabbit seems a strong one, but even here it is an undoubted fact that rabbits which breed at a prodigious rate are not those which are found near rich feeding grounds, there they are comparatively sterile. It is on the most barren sand hills near the sea, where food is poor and scarce, that they teem in myriads. The case of the sheep may be met in Mr. Darwin's own words previously quoted, "No domestic animal is more subject to disease than the sheep, yet it is remarkably fertile."

I take it, therefore, that the animal world in general fully corroborates the vegetable world in its evidence on the question at issue. We will now turn to the most conclusive and unanswerable case of man himself. I cannot, *in such a question*, put man in a kingdom separate to himself, believing as I do that he is influenced by very much the same laws as the vegetable and animal kingdoms, but I detach him in this paper from the rest, simply because our evidence about him is so much more abundant. To begin with individuals. Medical men, upon whose judgment I can thoroughly rely, tell me in confirmation of the dicta of Mr. Doubleday, that it is a recognised law of life with them that semi-convalescent people, and those only just recovering from prostrating diseases like fever plague, etc., are very fertile. It is proverbial with midwives that the same is true of consumptive people.

If we compare as classes the rich and well-to-do around us, especially those where the condition of prosperity has lasted for two or three generations, with the pauper population of our alleys we shall find that the rate of increase of the latter is much greater than that of the former. That in the houses where the word want is absurdly unknown, we have few olive branches round the table, while in the cellar dwellings near the drains they so abound that they may with great propriety be rather styled holly branches, and this, notwithstanding two important elements which ought theoretically to tell so much in favour of the well-to-do. One of these is the economical one that prudential restraint (a favourite doctrine of some philosophers) if feasible, may be expected to be put in force, not by the rich, who often wish for children, but by the poor who have too many. The other a physiological reason. It is well known that with rare exceptions a woman does not become pregnant so long as she continues to suckle her last child. Now, among the poor almost every mother suckles her children, while among the rich the number of mothers that do so is limited. Not as is often supposed because of mere fastidiousness, but because they secrete little or no milk, so that the condition favourable to pregnancy occurs at a much earlier date after childbirth among the rich than among the poor. The fact of poor fare inducing fertility is an old enough fragment of philosophy. The following extract from one of Marston's plays, written in the seventeenth century, which was pointed out to me by a friend whom I have previously named here, puts the problem rather humorously: "If Sir Amorous would have children, let him lie on a mattrass, plough, or thresh, eat onions, garlic, and leek porridge. Pharaoh and his council were mistaken in their device to hinder the increase of procreation of the Israelites by enforcing them to much labour of body, and to feed hard with beets, garlic, onions (meats that make the original man most sharp and taking). He should have given barley-bread, lettuce, melons, cucumbers, huge store of veal and fresh beef, blown up their flesh, held them from exercise, addled them in feathers, and most severely seen them drunk once a day, then would they at their best have begotten but wenches, and in a short time their generation would have enfeebled to nothing" ("The Parasitaster, or the Fawn," a comedy by John Marston. Collection of old English plays. London, 1814, vol. ii).

Sir Thomas Brown tells us, in his "Hydriotaphia," old families last not three oaks. I find the following passage in a work written by M. Muret so long ago as 1766, quoted in the article on population in the "Encyclopædia Britannica;" speaking of the extreme healthiness of the Pays de Vaud, he says, "Whence

comes it that the country, where children escape the best from the dangers of infancy, and where the mean life, whatever way the calculation is made, is higher than in any other, should be precisely that in which the fecundity is the smallest I will hazard a conjecture, which however I give only as such. Is it not that in order to maintain in all places a proper equilibrium of population God has wisely ordered things in such a manner *that the force of life in each country should be in the inverse ratio of its fecundity,*" etc., etc. This seems to forestall Mr. Doubleday by nearly a century.

I will now proceed with the proof, trusting in the main to Mr. Doubleday for my facts.

He repeats the well known remark that our peerage and baronetage are not old, and that but few of the old Tudor nobility, and almost as few of the representatives of the original creation of baronets survive. Out of 394 peers in Parliament in 1837, 272 had been created during the previous eighty years. Between the year 1611, when baronetcies were first created, and 1837, 753 became extinct, and counting all the baronets living at the latter date, together with those who had been made peers, they only exceeded the number of extinct ones by twenty-three. Of the original creation only thirteen remained, while of the vast numbers James I made during his lifetime only thirty-nine remained. So that unless there had been perpetual fresh creations both orders must have been all but extinct. As it may be said that this was caused by laws of primogeniture (although no title becomes extinct as long as any descendant of the original holder of it in the male line survives) it will be well to quote other cases. Amelot, writing of Venice, reckoned that there were 2,500 nobles who had voices in the council. Addison adds that in his day there were only 1,500, notwithstanding the addition of many new families since that time. He says it is very strange that with this advantage they are not able to keep up their numbers, considering that the nobility spreads equally through all the brothers, and that so very few are destroyed by the wars of the republic. Malthus, in his "Essay on Population," p. 278, says the same in regard to the rich bourgeoisie of Berne, quoting statistics in his own support. But the same thing was known long before this. Tacitus mentions how in the days of Claudius not only had the old patricians of the earlier monarchy and republic decayed away and become nearly extinct, but that even the newer creations of Julius Caesar and Augustus had gone the same way. Dr. Wallace has many pages of illustration from ancient writers to show how the luxurious and well-to-do classes rapidly disappeared in the great centres of Greek and Roman culture. The Mamelooks in

Egypt, the dominant caste of Turks in Europe, and of Manchu Tartars in China, all prove the same great fact. The result, then, of the general experience of the highest ranks in different nations, living under various conditions of life, among whom plenty and ease abound, who ought, according to the Malthusian doctrine, to be stocking the waste places of the earth, is that they are only kept alive by a constant recruiting and infusion of fresh blood from below. It may be urged that these are not fair examples—these are luxurious people whose big dinners and deep draughts have made them decrepit. It is well, therefore, that we should extend our survey somewhat further. Mr. Doubleday, fortunately, has dug much deeper.

The free burghers of Newcastle were a privileged and rich body of tradesfolk and artizans. They formed a close trades-union to which admission was to be had by outsiders by servitude as apprentices only. Doubleday has collected evidence to show that they were constantly diminishing in numbers, a decrease, he it remarked, accompanied by a more than corresponding increase among the people of Newcastle outside the burgess element. A curious pendent to this statement is the fact that since the loss of their privileges the burgesses have begun to increase at a much more rapid rate.

At Berwick, an adjoining town to Newcastle, with similar burgesses, differing only in not being wealthy and privileged, there is a marked contrast in the rate of increase, while in other privileged boroughs, such as Durham, Carlisle, and many more (see Doubleday, *op. cit.* 62) there has been a stationary or decreasing number of freemen.

If we take communities of men like the Quakers, among whom poverty is hardly known, who nearly all marry, and marry early, and who until lately seldom abandoned their sect, we shall find a general agreement among those best able to judge that they have not increased in numbers.

In America, before the civil war, while the slaves were increasing rapidly, the free blacks were decreasing. I am told by millowners and others that the vast increase of population that has occurred in Lancashire of late years has not been among the indigenous stock of the country, who are a comparatively stationary element, but among the Irish and semi-Irish inhabitants of the lower quarters of the large towns. It is notorious how crowded with children these low and miserable neighbourhoods are compared with the richer quarters, and how few of the women there are barren. If we extend our view to isolated portions of the community, we shall be forced to admit that this fertility is due entirely to the poor food and miserable living of these increasing elements.

One of the poorest and most destitute portions of the earth's surface is that comprised in the Scottish Hebrides. A miserable climate is supplemented by a scarcity of food and a want of clothing. Formerly the population maintained a decent existence by the manufacture of kelp, but the introduction of barilla and of free trade ruined the kelp trade, and a busy population was gradually reduced to the abject condition now existing at Skye, Lewes, etc. The conditions are those that in Mr. Malthus' view ought to militate against an increase of population, and yet we find that they have doubled their numbers in 60 years. See the observations in "Anderson's Highlands," p. 262.

From Sir John McNeill's Report on the state of the Western Highlands and Islands of Scotland, published in 1851, it would seem that the average of each family in Ulva and Tiree is a little over six, that is, father and mother and four children. The births in Rasay and Rona for the three years before the report were three times as many as the deaths. For many years, he says, the condition of the people in this district has become worse and worse, and Sir John makes an elaborate comparison between twenty-seven of the most miserable of the West Highland parishes with twenty-seven prosperous and well-to-do parishes in the Eastern Highlands, and found, to use Doubleday's words, that in the former, where the population was in constant danger of dying out for want of nutriment, and barely continued to exist, where the failure of the potatoe crop or the decline of the market for kyloes brought famine to their doors, the wretched population had increased between 1755 and 1841 at the astounding rate of 126 per cent., while in the eastern parishes there was a decrease during the same period of 29 per cent.

In Ireland we have a country whose circumstances are very similar. In 1837, out of a population of 8,000,000, no less than 2,000,000 were wandering and houseless mendicants, subsisting on charity. Dwelling for the most part in mud cabins, without window or chimney save a hole in the wall or roof, and shivering over a peat fire, they lived almost wholly on potatoes. Every edible besides—including wheat, barley, peas, beans, butter, beef, and bacon—was exported from the country, and under such conditions what do we find to be the rate of increase of the inhabitants? Between 1695, when the population was estimated by Captain Smith at 1,034,102, and 1831, when the census returns made it 7,734,365, there was an increase of 750 per cent., an astounding result, and more astounding still if we consult the table given by Doubleday, page 120, showing the intermediate years and how it grew with an accelerated speed as the poverty increased. In the decade between the census of 1821 and that of 1831 there was an increase of 930,000 in a total population of 7,000,000.

In Sadler's answer to Malthus there are some interesting tables about the number of children born in years of scarcity and those of plenty, from which it appears that, notwithstanding that the *latter are marked by a greater number of marriages, the former are marked by a greater number of births.* In 1846, a very prosperous and cheap year, there was an increase of 3,500 in the number of marriages and a decrease of 300 in the births the following year. In 1847 came the potatoe disease and famine and bank crisis, so that in the next six quarters there was a decrease of 2,000 in the number of marriages, while in the last three quarters of 1848 and the first three of 1849, when this decrease in the marriages ought to have begun to tell, there was an increase of 2,650 in the births.

Again, from 1488 to 1650 there cannot be much doubt that the population of England was rapidly diminishing. The contemporary writers and the Statute Book are full of proofs of the fact. During the same period there can be as little doubt that wealth was more generally diffused in England than at any other time. Acts of Parliament to limit wages and luxury, acts whose preambles set out the exceeding plenty then prevailing, are not to be mistaken. Fortescue mentions that the land was full of rich men. Many yeomen could spend £100 a year, equivalent to at least £600 a-year now. He says they were rich in gold and silver, drank no water, eat plenty of all kinds of flesh and fish, wore fine woollen apparel, etc., etc., and he especially compares the wealth of the English with the poverty of the French. An artisan earned in three or four days what would buy a sheep, a calf, or a quarter of barley or malt. Wine and beer were then common drinks of the people. An Act of the 24th of Henry VIII declares beef, mutton, pork, and veal to be the ordinary food of the poorer sort, and so we might go on for pages quoting facts that show that at this period of English history, when the population was rapidly diminishing, wealth and plenty were generally diffused.

Leaving these realms and crossing the channel, let us return with Mr. Doubleday to the north of Germany. We there find the land barren and the people poor, but crowded. In Bohemia, with its cold climate and its inhabitants feeding sparingly on poor diet of barley, oatmeal, potatoes, and milk, we have a population of 3,885 to a square German mile. In Silesia, where the climate is much milder and the crops better, but the people are very poor and badly fed, 4,090 in the same area; while in Bavaria, which is rich and prosperous, the population is only 1,980 to a square mile. In France, whence Doubleday has collected much valuable information, I will only quote one remark taken from a work of Mr. Thornton's on over-population.

In the Département du Nord, which contains most of the seats both of the French cotton manufacturers and of French destitution, population increases at a rate considerably more than double the average rate of the whole kingdom, or about 13 per cent. in ten years.

In Italy (excluding Naples, the most marked example, perhaps, of all, but about which statistics are wanting), Italy, where the country population is so well-to-do and has a climate which favours man in many respects, the average number of births to a marriage is three only, a proportion below that of any other European country, perhaps, except the equally well favoured Provence.

In Holland and Belgium, where we have a very rich soil very highly cultivated, where the law favours the division of property, and where we are so often told by travellers that population abounds, it is only 1,800 to the square English league, while in Ireland, one-fourth of which was bog, it amounted in 1837 to 2,391 persons to the square league.

America has sometimes been cited on the other side, but with very great perversity. In America the population has increased immensely from emigration and at an immense rate among the newer inhabitants, those whose first years of American life are those of hard toil and harassing struggle with Nature. It is notorious that in Kentucky and in the older parts of New England the rate of increase of the population is very moderate; indeed, while the great cities, which are even more crowded with abject poverty than those of Europe, notwithstanding the Utopian latitudes in which they are situated, are increasing rapidly and chiefly among the Irish inhabitants.

The increase of the black population of the States is at a remarkable rate, if we are to be guided by the notions of Malthus; and this increase has continued since emancipation, as the recent census shows, so that it cannot be due to the interested motives of the slave-owners, as some would urge.

In China and Japan cattle and sheep are almost unknown, in India the Brahmins forbid the eating of flesh, so that we have in these areas populations living on vegetable food, and chiefly on rice. However travellers may otherwise differ, they are all agreed in describing the miserably poor and wretched condition of the inhabitants of these areas; they agree also in describing their wonderful fecundity and numbers; they are packed most closely on the rivers, and where a poor fish diet is their ordinary fare. If it were not for wholesale infanticide it would be hard to see how the Chinese householder could live. In India, in the old province of Bengal, where the universal food is rice, the average of population reaches the immense total of 2,166 persons to each square league of land.

If we compare these areas with similarly situated areas elsewhere, where animal food is generally eaten, with South America, or Russia, or Turkestan, beyond the Oxus, we shall find a marvellous contrast. In the latter the population is very sparse, and the rate of increase very slow. And where we have any facts about semi-savage tribes who have changed their mode of living from a pastoral to a settled state, and have discarded the crook for the plough, such as the Tchuvashes, Bashkirs, etc., we shall find that synchronous with this change there was also a sudden increase in the census returns. These subjects of the Czar, who are now very fertile, were until about a hundred years ago very much the reverse.

We have now taken a rapid survey of civilised and uncivilised communities, and we ought to complete it by a similar survey of savage tribes, but unfortunately our facts are not so easy to find among these. What facts we have tend to corroborate our position entirely. Thus Lieutenant Musters, in a paper read before our society not long ago on the Patagonians, told us that it was the custom for the women among them, when they had been with the men, to get bled, as they believed it made them fertile. Mr. Price told us the same of the Quissama tribe in Madagascar. Neither of these races have been sophisticated with the philosophy that is popular in Europe, and their evidence is a most valuable empirical support to our position. It agrees so completely with the theories put in practice by both gardeners and stock-keepers, and to which I have already alluded.

I shall deal more in detail with the several causes that have extinguished races in my next paper of this series. There is one of them which comes opportunely here. Mr. Wallace was sarcastic in his observations upon me because I attributed the extinction of the Hottentots to the greater luxury of their lives having induced sterility among them. I believe this position, notwithstanding the unphilosophical sneers about it, to be most reasonable. We have parallel cases in Tasmania and New Zealand, where the race has undoubtedly diminished, and very fast, chiefly because of the barrenness of the women. In New Zealand the facts have been collected by Mr. Fenton in a most interesting paper entitled "Observations on the State of the Aboriginal Inhabitants of New Zealand, Auckland, 1859." From this I quote: "The usual number of barren to productive females is 20 in 487, or 1 in 24.35. Among the Maoris the numbers are 155 in 444, or 1 in 2.86, manifesting that the general presence of the procreative power among the Maori females is slightly more than one-ninth of that among females belonging to communities of which the population is increasing" (*op. cit.* 28). Again, "The unfruitfulness of women is likewise a recent characteristic, if the

Maories are to be believed when speaking on this subject. And this must be so, otherwise it is impossible to account for the great increase of the population during the twenty generations which the Maoris have passed through in this country, an increase which has taken place notwithstanding the considerable expenditure of life caused by perpetual wars and in spite of the constant operations of numerous other influences calculated to check the increase of numbers and shorten the duration of life. 'The rude forefathers of the hamlet' were, according to the universal consent of their existing representatives, blessed with prolific wives, and not seldom with several all producing simultaneously. Absence of issue from a union was not indeed unknown in former times, but the desire of children was always strong in the breast of the Maori female, and she was usually held in respect according to the number of children with which she had strengthened the tribe."

The only cause I can assign for this increased sterility is that made fun of by Mr. Wallace, namely, the contact of European civilization. The same was true also in Tasmania, where the greatest perseverance was used to induce the few surviving natives to breed, and without avail, and those who believe that man physically is only a member of the great animal kingdom will have no difficulty surely in accepting that as true of him that is true of all other forms of life, namely, that luxury makes him sterile and want fertile.

I must now briefly consider some remarks made by Mr. Herbert Spencer on this question, to which a correspondent of *Nature* has called my attention.

If I understand Mr. Spencer's argument rightly, it amounts to this, that Doubleday's facts are correct, but that his inferences are not so, and that the true explanation of them is found in the general law that animals propagate in the inverse ratio of their nervous and mental development, that in fact the simplest structures are the most prolific. Doubleday has himself considered this theory in the postscript to his third edition, and made some apposite remarks about it. He says with some reason that it may be perfectly true that the simpler structures *are* more prolific than the more elaborately organised structures, but it by no means follows that the simplicity of the structure is *the cause* of the fecundity." In the economy of nature a million blades of grass are wanted for one tree, and hundreds of herrings only make a mouthful for a porpoise, and as there is a greater need there is some law which supplies that need.

It is not difficult to test Mr. Spencer's position. Are the prolific Irish, Chinese, and Hindoos inferior mentally and in nervous development to the New Zealanders, the American Indians,

or the Hottentots? Are the English and Americans inferior mentally to the Spaniards or the Turks, or are their brains less in bulk? Is the shorthorn or southdown more gifted with nervous and mental attributes than the Kyles and the mountain sheep? Do the semi-domesticated animals mentioned in such profusion by Mr. Darwin gain so much in mental and nervous development as to check their powers of reproduction altogether, as compared with their wild relatives *who have to exercise all their ingenuity and skill in catching their food*? Is the deer more intellectual than the greyhound or the rhinoceros than the shepherd's dog? Does ringing a tree or cutting its roots increase its complexity of structure? Does removing it to the greenhouse do so? *Do not battling with difficulties and struggling for existence tend to increase rather than decrease the nervous development and structural complexity of an organism*? I take it that there can only be one answer to these queries, and that answer adverse to Mr. Spencer.

In conclusion, I must state the result of the evidence I have collected in this paper, in which I have not knowingly shirked or evaded one difficulty, and in doing so I cannot but conclude that sterility is induced by vigorous health and by a plentiful supply of the necessaries of life, while fertility is induced by want and debility, and that this law acts directly against Mr. Darwin's theory, in that it is constantly recruiting the weak and the decrepit at the expense of the hearty and vigorous, and is constantly working against the favourite scheme of Mr. Darwin, that in the struggle for existence the weak are always being eliminated by the strong. I am aware that I only meet one factor in Mr. Darwin's argument. I hope, with your permission, to traverse the whole field he has occupied in future papers. The next one will be on "The Substitution of Types."

DISCUSSION.

Mr. HUGHES thought that the subject brought forward by Mr. Howorth offered interesting matter for discussion, and was fairly put, but protested against the proposition which the author combated being in any way identified with the views of Mr. Darwin. Mr. Darwin did not hold that the races which prevailed were necessarily larger or stronger, but simply that they had the greatest total of advantages for holding their own under the conditions in which they were placed. It was not always necessary for the survival of a race that they should have a very numerous progeny; for instance, the passenger pigeon produced very few young in its whole life, while the salmon, which had so many enemies from the time it was spawned that the race would stand a poor chance of surviving if it had not an almost innumerable offspring, produced its tens of thousands every year. The plant that needs a special combination of soil and weather

to sow itself, or forms the food of many animals, must produce many seeds. The proposition laid down by the author he understood to be, that conditions which *weakened* the individuals tended to make those individuals more fertile; and in reply to that, Mr. Hughes went on to show that the cases adduced by the author did not bear out this view. The gardener who prunes and gashes his plants, or removes them to other soils does so, not to *weaken* the plant, but to cut off the undue development of that part which would interfere with the production of what he requires. In the cauliflower and wheat, he wants more flower and seed; in cabbage and grass, more leaf. Fat and heavy cattle are produced by artificial means, and would not survive in a state of nature. In the case of fowls, man has selected certain breeds for laying, &c., and of course, knowing that over-feeding is injurious, does not feed his laying-hens in the same way as those he wishes to fatten; but no amount of cutting down their food would make a Brahmapootra lay like a spangled Hamburg. He did not believe that any race actually stunted for food was more prolific than the same race under healthy conditions with enough food. In the case of man, many artificial circumstances had to be considered. Among those who had a hard, rough life, the sickly young received no care, died off, and so those who were left were the most vigorous and grew up to propagate a vigorous race. Other cases adduced might be explained by the hereditary habit of the disuse of certain organs; and others, such as that of the Maories and the wild cattle of England, by the too close breeding in and in, when, from various causes, the race had become too small to allow of greater choice.

Mr. LEWIS, while thinking with the author of the paper that the theories commonly called Darwinian had been pushed by some people to unreasonable conclusions, could not but agree with the President that the author appeared to be confounding various conditions which were not necessarily the same. The principal thing proved by the paper appeared to him to be that an artificial state was less favourable to propagation either of man or beast than a natural state.

Dr. CHARNOCK said, according to the author of the paper, the poorly-fed are the most fertile. Did he also mean that there was greater longevity among them? He (Dr. Charnock) thought that the term "poorly-fed" was sometimes applied to those who lived upon a vegetable diet; but if an Irishman consumed eight pounds of potatoes daily, it might perhaps be equal to a pound of flesh consumed by anybody else.

Mr. QUARITCH said that Mr. Howorth had endeavoured to maintain the bold assumption that species of the animal and vegetable kingdoms are multiplied by their weakest and most delicate individuals, in opposition to Mr. Darwin, who refers to the strongest and fittest that power of reproduction. Mr. Quaritch considered that the theories of those two gentlemen would not be found upon close inspection to differ very materially, although Mr. Howorth had exaggerated his case by selecting the plant grown on poor soil, and the under-fed, delicate man, or other animal. It is really the hardy plant, as dis-

tinguished alike from the finest and showiest and the puniest and weakest, which best propagates its kind. And it is also the hardy human pair, in most cases underfed—that is, subsisting upon a minimum of food—which reproduces our own species. The fact is such, not because the hardy individuals are in a condition of so-called semi-starvation, but because the struggle for existence has steeled their frame, and a rigorous abstemiousness precludes any of those unnecessary outgrowths—the result of a more generous diet—which weaken the body and require to be fed. Nature will most readily propagate species under conditions in which its laws are most closely followed; and it cannot be doubted that the reproductive power lies in the healthiest and strongest individuals of every kind—not in the finest-looking, nor in the weakest. Over-feeding and starvation are punished by disease and death. Rich living induces an imposing show of health; but it is extreme frugality which bestows a maximum of procreative power. Mr. Quaritch repeated his opinion that Mr. Howorth and Mr. Darwin differed in little more than words, their facts and real conclusions being similar.

After a few remarks by the President, Dr. King, Mr. Charlesworth, and Captain Burton,

Mr. HOWORTH replied. He said the discussion has been chiefly one about terms, and has not met the points raised by the paper. The author does not contend against the notion that the fittest forms of life for surviving survive. This is a truism which every natural philosopher from Aristotle downwards would willingly admit; and the grave fault of most Darwinians is to mistake this identical expression for Mr. Darwin's position. Mr. Darwin's concrete examples of this law furnish grounds for criticism; and it is these concrete examples that were chiefly attacked in the paper. Mr. Darwin contends that among a number of individuals struggling for existence the strongest, or the most crafty, or the most enduring, elbow out the weakest, etc., by monopolising the food and other resources which are necessary to life. The object of this paper is to show that those individuals who succeed in obtaining more food, and in monopolising those resources, are condemned by some higher law to comparative sterility, while those that are weakly and sickly and ill-fed are endowed with a corresponding degree of fertility. So that there is a constant fight going on against the increase of the well-fed and the prosperous, instanced by such examples as the wild cattle at Lyme Hall, in Lancashire, which have gradually decayed and become sterile under conditions of plentiful food, etc., etc., while the kyloes in the Highlands are just as fertile. In this we have only a generalisation of the fact pointed out by Mr. Doubleday in answer to Malthus, and which I take to be a most complete answer to that philosopher. Mr. Darwin, as he himself says in his work, merely extended and amplified the conclusions of Malthus until they included the whole animal and vegetable creation, and the author of the paper similarly extended the conclusions of Mr. Doubleday. Sir John Lubbock said that the author had mistaken fat for vigour, and over-feeding for good health; but this is hardly a fair way of describing the ex-

amples quoted in the paper. It can hardly be said that the population of Ireland during the famine, that of the Western Highlands now, the condition of consumptive and sickly people, of sickly and decrepit animals like sheep, etc., etc., all of which were cited as typical instances of fertility, are also instances of animals in a normal state of health. That ringing a pear-tree, and reducing cacti, orchids, etc., to the point of death to induce them to bloom and bear fruit, is to mitigate the effects of over-feeding. The very essence of Mr. Darwin's argument is that those individuals which get more food by any means, or struggle into stronger and more vigorous life by any means, have an advantage in the struggle for life which ends in their elbowing the others out of existence, and that it is these forms that survive. The paper endeavoured to prove, and in the author's opinion succeeded in doing so, that these forms fail to reproduce themselves in the manner that less favoured forms do, and have a tendency to die out. In regard to particular objections, the reference to seeds that have been kept some time was not meant to apply to those mythical examples of the Egyptian wheat, etc., which have been long ago exploded, but to the common-place experience of gardeners, who find the seeds of melons, cucumbers, etc., which have been kept a year or two, germinate more certainly than freshly-gathered seed. Reference was made by one speaker to hereditary habit inducing a more fertile breed, and also producing the cases so common in the upper classes of mothers who cannot suckle their offspring; but this cannot apply to the Maories and Red Indians, with whom the delicate notions of our philosophers are not received. The author could not see any analogy between blind people hearing and smelling more acutely than others (no doubt due to the necessity of exercising those senses more freely) and the fertility induced by deprivation of food or harsh circumstances. Nor could he allow with the same speaker that the poor are very thankful for many children, the children being a source of profit rather than otherwise. This fallacy has been exposed by the recent Royal Commission upon infanticide. One gentleman asked if the poorly-fed were long-lived as well as fertile; the test that the author urged was not the longevity of individuals, but the increasing numbers in each generation in different areas. Thus Ireland and China were increasing their populations at a very rapid rate under conditions very adverse, according to Mr. Darwin's extended reading of Malthus, while Sweden, South America, and Turkestan, were remarkable examples on the other side.

The meeting then separated.

MARCH 4TH, 1872.

GEORGE HARRIS, Esq., V.P., *in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

CHARLES F. TYRWHITT DRAKE, Esq., F.R.G.S., was elected a Member.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the ASSOCIATION.—Transactions of the National Association for the Promotion of Social Science, 1871.

From the EDITOR.—The Journal of Psychological Medicine, vol. vi, No. 1, 1872.

From the EDITOR.—Matériaux pour l'Histoire Primitive et Naturelle de l'Homme.

From the EDITOR.—La Revue Scientifique, Nos. 35 and 36, 1872.

From the MANX SOCIETY.—Records of the Tynwald and St. John's Chapels, Isle of Man.

From the SOCIETY.—Proceedings of the Royal Society, No. 131, 1872.

From the AUTHOR.—Recherches sur les Fontanelles Anomales du Crane Humain; Coup d'Œil sur l'Anthropologie du Cambodge, by Dr. E. T. Hamy.

The following paper was read:

ANTHROPOLOGICAL COLLECTIONS *from the HOLY LAND.* No. III.
NOTES *on the HAMAH STONES, with REDUCED TRANSCRIPTS.*
By Captain RICHARD F. BURTON, F.R.G.S.

I VISITED Hamah between February 28th and March 5th of 1871, and my first care was to inspect the inscriptions, as Mr. Walter Besant, M.A., Secretary of the Palestine Exploration Fund, had asked me to do in his letter of December 7, 1870.

The stones were noticed as early as A.D. 1812. Burckhardt ("Travels in Syria," p. 145) says of them: "In the corner of a house in the Bazar is a stone with a number of small figures and signs, which appear to be a kind of hieroglyphical writing, though it does not resemble that of Egypt." They remained in obscurity till 1870, when Mr. J. Augustus Johnson, of New York, Consul-general for the United States at Bayrut, and the Rev. S. Jesup, of the Syrian Mission, remarked them while looking through the Bazar of the old town. The former presently printed, in the "First Statement of the Palestine Exploration Society" (No. I,

July 1871, New York, published by the Committee), a reduction from a facsimile of No. 4 inscription—that noticed by Burckhardt, and still embedded in a wall near the bridge. The latter also “endeavoured to purchase a blue (basaltic) stone* containing two lines of these strange characters, but failed to obtain it, because of the tradition connected with and the income derived from it. Deformed persons were willing to pay for the privilege of lying upon it, in the hope of a speedy cure, as it was believed to be efficacious in spinal diseases.” I heard nothing of this superstition.

A certain Syrian Rayyah, of the Greek orthodox faith, named Kostantin Khuri bin Daud, made sundry transcripts of the inscriptions, and a copy was deposited with Dr. Bliss, President of the (U.S.) Syrian Protestant College at Bayrut. Here they were inspected by Messrs. Tyrwhitt Drake and Palmer, the latter then acting under the (English) Palestine Exploration Fund, before their return to England in September 1870. Herr Petermann published some details concerning the inscriptions in the *Athenæum* (No. 2267) of April 8, 1871. In March 1871 I bought from Konstantin the originals of the copies possessed by Dr. Bliss, and I proposed sending them home to the Secretary of the Anthropological Institute, when Mr. Tyrwhitt Drake apprised me of his intended return to Syria with the object of photographing and “squeezing” the stones. He set out for Hamah on June 13, and on June 24, 1871, he brought back good “squeezes,” and sun-pictures which were not wholly successful. I believe that his second visit gave better results, and he also found a similar inscription at Aleppo.

The local Dryasdust, Kostatin el Khuri, had not visited the country to the east of that venerable town, Emesa (Hums), and he had only heard of the interesting region on the north-east known as the 'Alâh (العلّاه) or “upland.” The extent may be roughly laid down as two days' riding west-east towards the Euphrates, and from Salamiyyah, the *avant-garde* of the Palmyrene, on the south, to six hours north of Mu'arrat el Hu'umân, on the Aleppo-Damascus road. Here, according to tradition, although our maps inscribe the region “Great Syrian Desert,” are some three hundred and sixty villages—a favourite popular number—almost all, if not all, in ruins. I was able to visit only four of them. Their stone-built floors and ceilings, with monolithic doors, shutters, and rafters of basalt, reminded me of the “Land of Bashan,” that is to say, the Leja and the Hauran valley and mountains. Two ruins showed sundry large clean-cut and raised inscriptions, with crosses which suggested their origin. It is not

* The term may remind us of the “blue stones” of Stonehenge, which differ from the others, and which were brought, it is supposed, either from Cornwall, or preferably from Ireland.

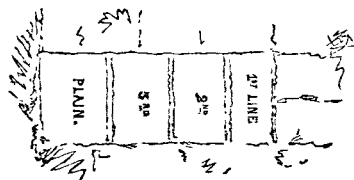
a little curious that in this section of the country, lying east and west of the Orontes valley, many inscriptions are found in cameo, not incised, as is the general rule of Syria and Palestine; thus perpetuating the style of the Hamah Stones.

It was at first my intention to employ Kostantín el Khuri in copying these monuments. He proved himself, however, so ignorant, leading me a long way to see a Hebrew inscription which proved to be Kufic, so greedy of gain, and so untruthful a *Graculus esuriens*, that I was compelled unwillingly to abandon the project. Although Mr. Tyrwhitt Drake has successfully accomplished his somewhat perilous task of exploring the 'Aláh, the country east of Hums still awaits a reconnaissance.

The ten sheets accompanying this article had been applied to the blackened or reddened faces of the four Stones, one of which has, it will be seen, a double inscription; and the outlines were afterwards drawn with a reed pen. In a few cases the fancy of the copyist had been allowed to run wild: these vagaries have been corrected. The size of the facsimiles shows, *cetera va sans dire*, that of the Stones.*

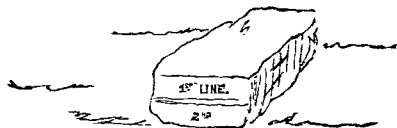
The material of all four is compact black basalt, polished as if by hard rubbing. The characters are in cameo raised from two to four lines, separated by horizontal framings, also in relief: they are sharply and well cut. The first thing which strikes the observer is, that they must date from the metal age, and that they are the work of a civilised race. No Bedawi would take the trouble to produce such results, nor, indeed, has he any instruments which would answer the purpose. I proceed now to a short description of each stone.

No. 1 (three lines) is in the north-western or Christian quarter of Hamah, known as the Hārat el Dahhān (of the Painter). The house (No. 23) belongs to one Sulayman el Kallās (the Lime-burner), and it is tenanted by Khwājah Jabbūr el Nasrani. The stone stands, or rather lies, on its side in the eastern wall facing the front impasse: it is close to the left jamb of the doorway to one coming out of the tenement, and the height of the lower margin is five feet from the ground. Under the three lines is a plain surface, and the general appearance of the stone is shown by the accompanying sketch.



* They have here been reduced to quarter size.

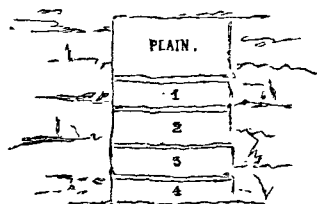
No. 2 (two lines) is lying in the lane called Darb Tak el Tahun (Road of the Arch of the Mill), that runs south of the same garden. It is a roughly-shaped block of basalt, with more length than breadth or thickness, and presenting this appearance :



No. 3 (three lines) is in the orchard or so-called "garden" of Sayyid Umar bin Hajj Hasan, a little to the west of the ruined Bab el Jesr, the gate at the southern end of the third bridge which spans the Orontes, the whole number being four. This tablet is built up with common stones around it, close to the ground, in the northern face of the southern wall, whose upper part is of unbaked brick. It is remarkably well and sharply cut, with long raised lines separating as in No. 1 the three rows of writing.

No. 4 (total, nine lines) is at the north-west corner of a little shop belonging to Mohammed Ali Effendi, of the great Kilani house, the Emirs descended from that archmystic Abd el Kadir el Kilani. Its site is the dwarf Bazar, a few paces from the west end of the Jisr el Tayyarah, also called Jisr el Shaykh, the second of the four bridges beginning from the south. It is easily found : fronting it to the east is the Hauz or tank belonging to the small Jāmi (Mosque) el Nūn, and it is within a few paces of the French Vice-consulate.

This stone, unlike the others, shows two inscribed faces. To the north, where its breadth is least, appears inscription No. 4 (four lines), with the upper part plain, after this fashion :



The other inscription (No. 5), in five lines, is upon the western side of the wall. It is considerably larger than the other ; hence the transcriber has called it the "long lines." The five compartments are here again divided by well-raised horizontal ribs, and the lower row of characters is not so easily read as its neigh-

bours. The upper line also does not cover more than half the breadth of the stone.

Besides obtaining photographs and facsimiles, it would, I believe, be highly advisable to secure the stones, and Nos. 1 and 3 might be bought at a reasonable price. But this will require a Vizierial letter, intended to be obeyed, and not like the tons of waste paper issued during the reign of the late 'Ali Pasha. A direct order will at once enable the Governor-general of Syria to take the stones from their owners, paying just compensation, and to send them out of the country. When at Hamah I began to treat with the proprietor of No. 1, the Christian Jabbûr, who, barbarously greedy like all his tribe, began by asking a hundred napoleons. And if the purchase of the stones be judged advisable, the less said or written about them, on the spot at least, the better, as they may share the fate of Mesa's Stèle.

I borrow the following notice of the stones from Mr. Johnson's notes before alluded to :

"We should naturally expect to find in this vicinity some trace of the Assyrian and Egyptian conquerors who have ravaged the valley of the Orontes, and of their struggles with the Hittites on this ancient battle-field, and of Solomon, who built stone cities in Hamath (II Chron viii, 4), of which Palmyra was one. But we find nothing of the Palmyrene on these stones. The arrow-headed characters are suggestive of Assournasirpal. In the inscription on the monolith of Nimroud, preserved in the British Museum, in relating his exploits 915 B.C., he says : "In this time I took the environs of Mt. Lebanon. I went towards the great sea of Phœnicia. . . . I received tributes from . . . Tyre, Sidon, &c. . . . They humbled themselves before me.' And a little later, 879-8 B.C., Salmanazar V says : 'In my 21st campaign I crossed the Euphrates for the 21st time ; I marched towards the cities of Hazael, of Damascus. I received the tributes of Tyre, Sidon, and Gebal.'

"Until the interpretation of these mysterious characters shall be given, a wide field is open to conjecture. Alphabetic writing was in use 1500 B.C., but the germs of the alphabetic system were found in the hieroglyphic and hieratic writings of the Egyptians upwards of 2000 B.C. Some of the attempts at picture-writing on these Hamath stones suggest the Egyptian system, which consists of a certain number of figures to express letters or syllables, and a vast number of ideographic or symbolic forms to represent words. Other characters represent Phœnician letters and numerals not unlike the Phœnician writing on the foundation stones of the Temple at Jerusalem, recently deciphered by Dr. Deutsch of the British Museum.

"In framing their alphabet the Phœnicians adopted the same

process previously employed in the Egyptian phonetic system, by taking the first letter of the name of the object chosen to represent each sound; as, A for aleph (a bull); B for beth (a house); G for ghimel (a camel): in the same manner as the Egyptians represent A by an eagle, *akhem*; M by an owl, *moulag*, &c.

"Some scholars have designated Babylonia as the true mother of the characters employed in very ancient times in Syria and Mesopotamia. And it appears that, besides the cuneiform writing found on Assyrian and Babylonian monuments, a cursive character was also employed identical with the Phœnician, and therefore possibly borrowed by the latter. Kenrick, however, remarks on this theory, that the occurrence of these characters only proves the intercourse between the two people, and not that the cuneiform was the parent of the Phœnician. We have in these inscriptions of Hamath a mélange of all three, and perhaps a connecting link between the earliest systems. To suppose them to be bi-lingual or tri-lingual only increases the difficulty of interpretation in this case, for there is not enough of either to furnish a clue to the rest.

"The 'Carpentras Stone' contains an analogous inscription; it comes near to the Phœnician, and has been thought to present the most ancient specimen of the Aramean series. This and the Palmyrene writing form the links between the coin characters and the square characters, and are supposed to represent a language in a state of transition. That the Hebrews borrowed the use of writing from Mesopotamia or Phœnicia has been universally admitted; and according to Gesenius the old form of their writing was derived from the Phœnician, and retained by the Samaritans after the Jews had adopted another character of Aramaic origin.

"Now, may it not be that in these Hamath inscriptions we have fallen upon a transition period, when the Phœnicians, or their predecessors in the land, were using the elements of writing then in existence, and before the regular and simple Phœnician alphabet had been perfected?

"The 'Carpentras Stone' has been considered by Gesenius to have been executed by a Syrian of the Seleucidan period. The 'Rosetta Stone' dates back to 193 B.C. The characters on these stones have much in common with those of Hamath. Champollion's 'Key to the Hieroglyphics' will be of aid perhaps in solving the present mystery. But we shall be surprised if the inscriptions of Hamath do not prove to be older and of greater interest than any recent discovery of Egypto-Aramean or hieroglyphic characters."

Dr. Eisenlohr, Professor of Egyptology at Heidelberg, in a letter

asking permission to publish these inscriptions, writes : " Though I believe we are at present not able to give a translation of them, I am still persuaded they will be of the highest interest for the scientific world, because they are a specimen of the first manner of writing of the people of that country."*

My conviction is, that the Hamah inscriptions form a link between picture-writing and alphabetic characters ; and I would suggest that the most feasible way of deciphering them would be by comparing them with the "Wusùm" (وسوم) of the several Bedawi families, tribes, and clans. These marks are still branded on the camels, and are often scrawled or scratched upon rocks and walls, as a notice to kinsmen that friends have passed that way. I need hardly say that the origin of "Wasm" is at present unknown ; it doubtless dates from the remotest antiquity, and it has probably preserved the primitive form of the local alphabets. For instance, the Anezeh mark is the circle ; and this we find, to quote only two instances, representing the 'Ayn (eye, fountain, "eye of landscape") in the Asmunazar or Sidonian epitaph, and in the Phœnician, or rather Canaanite, characters of the Moabite stone.

Again, the circle is shown on the sculptured stone of New Grange, and in the ornament at Howth (figures 68 and 71, Fergusson's "Rude-Stone Monuments ; London, Murray, 1872). Captain Warren (p. 148, "Palestine Exploration Fund," No. IV, December 31, 1869) saw the signs ♀ and Δ upon the pointed archway of Sabbah, the ancient Masada : he also saw the former symbol upon the flanks of the Fellahín camels, and he "believed it to be a Bedouin mark for the district (?) or tribe. In Spain there are marks peculiar to districts and families, and the horses are all branded with them, just as we mark our sheep ; and the camels here appear also to be branded according to their tribes or owners". Other Eastern travellers must have collected hundreds of these "Wusùm ;" and were the want made known, we might soon produce a volume of lithographs, which would not only supply a special want, but also prevent future writers confusing, as lately done by more than one, Bedawin brands with "Naba-

* I cannot, however, believe, with Mr. Johnson, that the bas-reliefs on the monument called Kamu'a Harmul (the column of the Harmul village) can date from the same period. The people declare that it was built upon a basaltic mound to denote the source of the Asi or Orontes ; we (that is, Messrs. Tyrwhitt Drake, Palmer, and I) thought it the tomb of some hunter : our reasons being that 1, there are no inscriptions ; 2, the rude alt-reliefs on the four sides represent weapons, and wild beasts wounded in the act of flight ; and 3, the solid three-storied building is near the ancient Paradisus (παράδεισος, or hunting-park), identified by Dr. Robinson with the ruins at Jusyat el Kadimah. Mr. Porter's "Five Years in Damascus" represents the solid square structure as it stood some twenty years ago—now the southern side has fallen to ruins, and the pyramidal capping will soon follow.

thæan characters." Messrs. Tyrwhitt Drake and Palmer neglected no opportunity when mapping the Sinaitic Tih or Desert of the Wanderings, and I have also been able to fill up sundry pages of note-books.

"Hamah of the Asi," or Orontes, the Hamath of Scripture (חמַת, *arx*; *munimentum*, e.g., Hamath Soba, or Zobah),* was the capital of a little kingdom at the period of the Exodus. Its king, Toi, yielded allegiance to David (II Sam. viii, 9); it was called "great" by Amos (vi, 2), and was, we have seen, ranked by an Assyrian monarch with the most important of his conquests. Originally inhabited by the Canaanites (Gen. x, 18), it is frequently mentioned as the northern border of the Land of Promise, although it has as yet formed no part of the "Holy Land." Every guide-book will tell how, under the name Epiphaneia, it became famous in the days of the Seleucidæ, and how Seleucus Nicator, founder of Apamea (Kala'at el Muzik, kept his stud of five hundred elephants and thirty thousand brood-mares in the rich lands which the twin curses of Syria, the Bedawin and Misrule, have converted into the Great Syrian Desert; how subsequently it became, as it is now, a bishopric; and how, under the Moslem rule, it produced (A.D. 1743) the celebrated savant Abû 'l Fida (Abulfeda), Prince of Hamah, the worthiest scion of the Kilani house.

If Nablus occupies the most beautiful, Hamah certainly owns the most picturesque of sites in modern Syria. It has a cachet peculiarly its own, yet the general aspect of the valley somewhat suggested Bath. And it has its own sounds. Here the traveller hears for the first time the Na'ûrahs, those gigantic under-shot box-wheels, one of them said to be forty metres in diameter, which, creaking and groaning night and day, continually raise the waters of the Orontes from their deeply-encased bed to the level of the houses and the fields, and which serve adventurous gamins as merry-go-rounds. Each aqueduct and wheel, the latter built up of infinite piece-work, and with axles playing upon the summits of masonry triangles, has its own name—for, instance, El Mohammediyyah, mentioned by Burekhardt in 1812; and each is the property of a (very) limited company.

The situation of Hamah is a gorge-like section of the Orontes (Asi) Valley, which, sweeping from the south-east, winds off to the north-west. The highest part of the city is on the south-east; here El Alaliyât ("Les Hauteurs") measures 140 feet

* We find the name again in Amathus of Cyprus and Laconia. It must be remembered that the Talmuds, the Targums, and the ancient Syriac version of the Old Testament all explain Hamath by Antioch—a city which must have had a name before conquered by Alexander. The northern "entrance to Hamath" would be *via* Seleucia.

above the stream. There are four other elevations: 1, the Castle-mound to the north; 2, the Báshúrá quarter, north-east; 3, Shaykh Ambar el Abd, above the left bank of the stream; and 4, Shaykh Mohammed el Haurani, a continuation of the older and much larger river-valley. The ancient city has no walls, and few gates; and the orchard separating the various cemeteries and the clumps of cottages into thin dwarf conical domes, make it a veritable oasis: the Bedawin, however, have long ago destroyed the once celebrated oliveta of the neighbourhood. Four bridges span the stream, which at this season (March) is coloured *blond de Paris*—that is to say, dirty yellow. Three have parapets; all have rough and uneven floors, and mostly they rejoice in Saracenic arches of different sizes and shapes, here and there zebra'd with white and black stones (lime and basalt). The second from the south is the Jisr el Shaykh, or El Tayyárah, the “flying,” possibly so called from the Palace of Harun el Rashid at Baghdad. At the end, upon the right bank, rise the mansion and quarter of the Kilani Emirs; the tall walls stained with dirt and green mould poorly represent the “very fine palace” of Pococke’s day. The visitor will find much to admire at Hamah in the lofty and peculiarly graceful minarets, the perfection of lightness married to strength, which, numbering twenty-four, vie with the larger cupolas in adorning the sky-line. They usually consist of three sections: the finial; the balcony, with wooden awning against sun and rain, applied upon a smaller shaft; and the main body, a tower of larger dimensions. The most remarkable are the Mádnahs of Bab el Hayyah, of Khizr (El Maksúrah, and of the Suk el Shajarah: the model is that of the Jámi’a el Kabir, or Cathedral Mosque. It consists of the following structures, and the dwarf buttresses, or rather bevels, that break the basal angles, refer it to the days of Sinán Pasha, when architectural taste had not wholly died out of El Islam:

An urn-like domed finial of solid (?) stone.

Cornice and pendentives.

Eight light pillars and ties.

Smaller octagonal shaft.

Flat-topped wooden awning.

Larger octagonal shaft.

Three archlets sunk in each face of shaft.

Rose-light between two horizontal bands of black stone.

Plain circular light between ditto.

Base of octagonal tower.

The traveller will do well to visit the splendid saloons of Muayyad Bey, son of the Sherif Pasha who fought the French in Egypt. The hideous dome contrasts strangely with the in-

terior; such a mixture of Persian writing, painting, and gilding, with granite pillars, porphyry, marbles of all colours, and infinite variety of decoration, all gorgeous in the extreme, but tasteful, from the admirable proportions in which colours apparently discordant are made to blend, he will not see even at the capital. An architect might fill a small volume with the beautiful geometrical intricacies which everywhere meet the eye, and his study would add not a little to our northern ideas of ornamentation.*

A local curio is also to be found at the Jāmi'a el Hayyah, whose variegated dome rises conspicuously from the large cemetery in the Khan Shaykhun road at the southern extremity of the city. It derives its name, "Mosque of the Snake," from a block of the purest white marble, forming plain double capitals and bases, whilst the highly-polished shafts have been twisted into cables, writhing, as it were, in imitation of two huge boas locked in the closest embrace. I tried, but in vain, to buy this gem—it was "church property." A similar *tour de force*, but not so large nor so perfect, is found in the Mihrab, or praying niche, at the south-east angle of the Jāmi'a el Aksa at Jerusalem, and I lately saw a sketch of it, by the Rev. J. Niel,† at the rooms of the Palestine Exploration Fund.

One of the most interesting parts of modern Hamah is the Castle-mound, whose green feet approach the left bank of the "Rebel River." Like that of Hums, it probably served for a Sun-temple; but it has suffered even more severely from time and man. The hillock is evidently natural; a core of chalky rock is suggested by the silex and the agates which bestrew the summit. Naked stone also appears in parts of the scarp and counterscarp. To the east and south the material stands up in dwarf cliffs showing artificial strata of different colours, formed by charcoal, strews of pebbles, broken pottery, and other rubbish. The terrepleine was prepared for supporting the fane by layers of earth to which ruins have added; it is still tolerably regular, except where the people have dug into it for materials. The Saracens probably rivetted the slopes with an armour of stone, which has almost entirely disappeared in building and rebuilding the venerable city. The length of the oval summit from north

* In consequence of a suggestion by Mr. D. F. Crace, I made careful inquiries at Damascus from the books of patterns, coloured and plain, which contain the models still used by house decorators. It is believed that upwards of three hundred different arabesques are to be collected. Unfortunately we were obliged to leave Syria at the very beginning of my search.

† "Palestine Exploration Fund", No. iv, p. 176. But why the reverend gentleman should call the pillars "Solomonic twisted pattern", I cannot guess. Did Solomon invent any masonic patterns or orders of architecture?

to south is 350 paces; the shorter diameter from east to west measures 250, and the height (by aneroid) is 90 perpendicular feet. The green sides of the rain-seamed mound have not yet assumed the natural angle: here and there they are *bombés*; and whilst the talus in many parts measures 60 deg., at the south-east it is almost vertical. The lower folds, as in the mound at Hums, fall into a fosse which in olden days could probably be swamped by means of conduits; now the broad expanse is cultivated, like the grounds around the temple of Ba'albak. The main entrance was at the eastern fort, and here the rocky counterscarp was cut to resemble the buttresses of a bridge: in the scarp appears a silo, shaped like a soda-water bottle. The path winds easily up to the left; on the southern side there is another track, but this is steeper and less used. I need hardly suggest here, as at Hums, the necessity of a few shafts and tunnels.

The Hamathites have gained for themselves a very bad name in the guide-books. "They are haughty and fanatical, living in entire ignorance of the world beyond their own little sphere". The fact is that they are somewhat unused to the visits of strangers, and the turban, especially the green turban, still expects the hat to make way. Fortunately for me, my friend, Abd-el Hadi Pasha, an honest and honourable man, was occupying the Serai, and he assisted me through the little "difficulties." On the day after my arrival, a crowd assembled near the bridge to see me compare Kostanin's facsimile with inscription No. 4, and two men who behaved rudely, refusing to "move on," soon found themselves *au violon*. The red-cloaked owner of No. 2 stone also charged me with entering his garden, where women might, as is the custom, have been walking about unveiled. I asked him if it was the practice of his family to leave the gate wide open on such occasions—an innuendo which brought the blood to his pale face—and a reference to the Mutasarrif (Governor) soon settled the question. Beyond this I met with no incivility from the people. It must, however, be confessed that much of their good treatment was owing to my host, the excellent M. Fazli Bambino, Vice-Consul de France for Hums and Hamah, whose energy and *savoir faire* have given to the European name an importance before unknown to it in these regions, and who is distinctly not one of the "time-servers that write home their semi-annual reports, glossing over everything unpleasant to the official ear, and carefully omitting to mention the many opportunities they have missed of doing their duty". M. Bambino's nephew, Prosper Bey, soon showed me all that was worth seeing at Hamah, and guided me during a day's exciting ride over the outskirts of the Aláh.

The population of Hamah is laid down by Mr. Johnson, probably from Murray, at 30,000 souls. They own to 38,000 or 40,000, and I believe the number to be nearer 45,000. Of these some 10,000 are "Greeks"—that is to say Fellahs belonging to the Greek Orthodox Church under their Matrán (Metropolitan), Jermanos. The Jacobites range from 200 to 300; there are two or three Syrian Roman Catholic families, who "sit under" their priest, Khuri Mikhaïl. The French colony, including dragomans and all protected subjects, amounts to a total of thirty-nine souls, of whom two are settled in the "Mountain" (Jebel Kelbiyyah). The Christian quarter in the south-western part of the city is the most filthy and miserable of the twenty-four "Hārāt." As a rule the Nazarenes are poor; one man owns 200,000 francs, another 100,000 francs, and two others have 100,000 piastres. The Jews have entirely disappeared, leaving only a cemetery, which is also rapidly disappearing. The Moslems, therefore, number at Hamah more than three-quarters of the population. They boast of three great houses. The highest is the Kiláni, above alluded to: at their funerals all the names of their ancestry are recited, after the fashion of Dahome. The chiefs of this family are the Mufti Shaykh Sujjádāt el Kádiri and Shaykh Mohammed el Azhari. From a visit to the tent which some of the juniors had pitched on the hill of Zayn el Abidin, I judged that this *jeunesse dorée* had no absolute dislike to a guitar or to a glass of strong, very strong, waters. Second rank the Meccan Sherifs; and third the House of Mullah Khunkhwar of Kuniah (Iconium). I may end these notes on Hamah by saying that my visit took place during the Id el Kabir, or greater festival—a season when fanatical Moslems are apt to become extra-fanatical.

And now, Mr. President and gentlemen, I would again express my gratitude for the kindness and courtesy with which you have allowed me to read and print this somewhat lengthy *catalogue raisonné*, and to hope that you are not disappointed by the efforts of your representative in Syria and Palestine during the last two years. You will charitably remember that it was mainly a labour of love, undertaken amidst a variety of occupations, interrupted by business of a public as well as a private nature, and intended chiefly to supplement the geographical studies and explorations which occupied the greater part of my spare time.

In conclusion, I offer my thanks to my brother members of the Anthropological Institute who have enriched these papers with their valuable notes and illustrations; especially to Dr. C. Carter Blake, to Professor Busk, to Mr. John Evans, and to Mr. Augustus W. Franks. My friend Mr. J. F. Collingwood has also laid me under a heavy load of obligation by the energy and heartiness with which he has invariably assisted me.

The following notes were read.

1. DESCRIPTION of REMAINS from SILOAM. By C. CARTER BLAKE, Doct. Sci., F.G.S., Hon. Mem. A. I., Lecturer on Comparative Anatomy, Westminster Hospital.

ANY remains which are brought from the "by no means prepossessing"* locality of Siloam must be of interest to the student of Shemitic tradition. The present reliques deserve our careful examination.

1. Calvaria, comprising frontal and fractured parietal bones of a large ovately dolichocephalous individual. The frontal bone is equably arched and vaulted; the frontal bosses being large. There is a slight annular post-coronal depression, due (as Foville has pointed out) to the custom of swathing the head of the child tightly after birth. The coronal suture is deeply denticulated. There is a slight parietal exostosis, concomitant with enlarged Pacchionian depressions on the internal table. The superciliaries are small, and the external angular part of the frontal bone is flattish. The bones of the cranial vault are thin and delicate.

2. Frontal bone (in two pieces) of a large dolichocephalous individual. The supraciliary ridges are slight; the foramen converted into a notch on the left side. The orbital *voûtes* are wide and lofty.

3. Mandible of a powerful adult, with second molar on right side, and third and second molars, and second premolar in place, on left side. The third premolar on both sides has been shed during life. A large diastema exists between the second and third molars on the left side. The incisor teeth have been very small and delicate. The coronoid process is high, and its forward curve, as in some Andaman islanders, is prominent. The attachments for pterygoid muscles are strong; the mentum is prominent and mesepicentric.† The fangs of the premolar teeth have been large and deep; the angle is turned outwards. The molar teeth have been much larger than in the next specimen; but otherwise there is nothing to infer that it possessed more negroid affinity than does the Shemitic race generally.

4. Mandible of an aged individual of eurygonic form, with second and third molars in place on left side, showing much erosion, but of the size common in all non-negro races. The coronoid process is high and slender, the sigmoid notch consequently deep. The attachments for the pterygoid muscles well marked, and the angle prominent. The mylohyoid groove deep. The genial tubercles are not large. The first molar on the right side has been shed during life. The mentum is prominent.

* Dr. Thompson, "The Land and the Book", pp. 359-60.

† "Anthropological Review", vol. v, 1867, p. 296.

5, 6, 7, 8, 9. Fragments of parietal and occipital bones, probably referable either to skull 1 or skull 2.

On account of the broken condition of these bones, I do not attempt measurements. An examination of them leads, however, to the conclusion that they appertain to the race which has been called "Jewish" by comparative anthropologists. That this race inhabited the neighbourhood of Jerusalem at the time of the deposition of the present remains is, therefore, a conclusion which rests not on hypothesis or tradition, but on comparison of the osteal evidences now before us.

2. DESCRIPTION of SKULL obtained by M. CLERMONT-GANNEAU from DEIR-ES-SINNÉ, near SILOAM, from one of the graves in the necropolis termed MÁGHÁRA 'ISÁ ("Tomb of Jesus"). By C. CARTER BLAKE.

THE specimen before us is probably that of a small but adult individual, possibly female, and belonging to the (Osmanli) Turkish race. Its turreted aspect gives it some resemblance to the skull No. 1, from Dayr Már Músá el Habashi, and, like it, it has been asymmetrical, the depression having existed on the right side. The forehead is retrocedent in relation with the extreme height of the skull. The orbits are squared and laterally elongated. The nasal orifices are short, and round the nasal bone broad. There is slight maxillary prognathism. The first and second molars on the left side, and the first molar on the right, are in place, and show signs of erosion. The palate is moderately broad, without any excessive depth being shown.

The norma verticalis shows phœnozygism; but the zygomatic arches are slight. A large portion of the right half of the cranium has been broken off since death, and at a comparatively recent period. The sutures in the region of the alisphenoid and temporal bones are entirely closed, and the suture is serrated, but not deeply so. The sagittal and lambdoid sutures are in the same condition. The supraoccipital bone is deeply concave just behind the foramen.

It is impossible to estimate the precise breadth of the skull. The length has been 15·5 cent., and the height 10·0 cent.; the proportion of height to length, taking the latter as = 100, being 64.

The race to which the individual belonged was certainly Turkish, and the date of interment cannot be precisely estimated.

3. DESCRIPTION of HUMAN and ANIMAL REMAINS from MARAD SYRIA. By C. CARTER BLAKE.

THE fractured condition of the human remains from Marad pre-

cludes any very precise consideration of their race-characters. They may be comprised as follows :

Skull-pieces	37
Vertebrae.....	12
Ribs	7
Long bones.....	7
Scapulæ and ilia	4
Bones of extremities	7
	<hr/>
	74
Horn-cores of sheep.....	2

The bones appear to have belonged to four individuals at least, one of whom was large and robust, and one was a young child of probably about a year old. Some of the parietal bones are rather thick. One of the axis vertebrae is heavily ossified.

It is impossible to arrive at any conclusion as to the race to which these individuals appertained.

The fragments of frontal bone of young Syrian sheep accompanying them appear to be of the same age as the human remains.

4. DESCRIPTION of REMAINS from BASSUS'S TOWER at SHAKKAH. By Dr. C. CARTER BLAKE.

ALL the remains described in the present lot show characters identical with a Græco-Roman race of varying dimensions, and exhibiting various conditions of *post mortem* interment, which have affected the exact measurements of the skulls. They are in an exceedingly fragmentary condition.

No. 1.—This large brachycephalous skull, of which the frontal portion has become detached, shows traces of occipito-frontal flattening on the right side, which has led to the *aplatissement* of the right parietals and the right supraoccipital bone. The sutures being all open at the period of death has led to this abnormal process being more effectual than it would have been in those skulls (*e.g.*, the Louth) in which, the sutures having been closed early in life, the posthumal compression has produced a greater amount of deformation than in the present case. The sagittal, coronal, and lambdoid sutures have been open during life. There is no doubt that the individual was brachycephalous. The frontal bone is round and bombate, the nasal bones having been wide. The supraorbital foramina have been converted into notches on both sides. All the sutures are deeply denticulated, the lambdoid excessively so, and the latter shows traces of at least six large Wormian bones. The supraoccipital bone is small, and beneath the superior semicircular curved line the occiput rapidly curves towards the foramen. This is round and large. There are very slight traces of paroccipital processes

on both sides, and the post-condyloid foramina are deep. The facial bones are entirely absent. The auditory foramen (on the left side) is small, and the mastoids are large. The additamentum mastoidalis is ossified throughout the whole of its course. Although the *post mortem* compression on the right side has been great, it is possible that during life a great flattening of the parietals and occipitals existed, due either to a "suckling-board", or to the natural brachycephaly of the race. The points for muscular attachment on the skull are slightly marked, and it is probable that the individual did not exceed thirty years of age.

No. 2.—Facial bone of young individual with rounded orbits, and exhibiting slight artificial (*post mortem*) depression of the frontal bone on the left side. The facies has been orthognathic. The age of the individual was probably about seven or eight, the second dentition being just descending from the alveoli. This shows in place the two median top incisors, four premolar and molar teeth on each side in position, the last of the series being in the alveolus. The nasal spine has been large. The condition of all the sutures is such as indicates the extreme youth of the specimen.

No. 3.—This very small female skull exhibits the frontal suture entirely open and elevated along its length. The sagittal suture is open as well as the lambdoid, which shows an enormous triquetral Wormian dismemberment of the supraoccipital bone. The temporal is small. The palate is broad and shallow, the molar series having been entirely absorbed in the alveoli. The retrocedent frontal bone slopes rapidly back to the coronal suture, whence the curve is equable to the middle of the sagittal suture, and rapidly falls in an almost vertical line to the inion, beneath the *os inca* above mentioned, and shelves rapidly down to the foramen, which is round. The mastoids are small. The orbits are rounded. The supraorbital foramina have been converted into notches; the canine fossa is almost obliterated. The post-condyloid foramina are large. The nasal bones are large and broad, and the surface for the attachment of cartilage has been great. The skull has been immersed in soft humal mud, a large portion of which is adherent to it.

No. 4.—The posterior portion of a very large cranium, broken off a little in front of the coronal suture, and probably having been brachycephalous. The proportions generally accord with those of No. 3, though the skull is much larger. This character is very distinguishable on the posterior surface of the parietal and occipital bones, which are asymmetrically flattened, the greatest depression being on the right side. There is a slight paroccipital process on this side. The condyles are proportionately small, and the foramen magnum is rounded. There has

been a large triquetral bone cutting off the upper half of the supraoccipital, due no doubt to the use of the "suckling-board" in youth.

No. 5.—The fractured frontal bone of a young individual, in which the frontal suture has been to a great extent retained, and showing open and large frontal sinuses. The orbits have been rounded. The nasal bones are produced forwardly, and the forehead is fairly bombate.

No. 6.—In three pieces. This portion of a brachycephalous cranium is much eroded and worn. The frontal bone is in a very shattered condition, the supraciliaries having been large, but broken away. The lambdoid suture is the only one which can be said to be partially open, and deeply denticulated. The superior semicircular curved line is large, and the inion prominent.

The skulls from Bassus's Tower are both male and female, and undoubtedly belong to one race, and probably to one family.

No. 7.—Right femur, measuring 44 centimètres.

No. 8.—Right femur, measuring 42 centimètres.

No. 9.—Left iliac bone.

No. 10.—Twenty fragments of parietal and other bones of great thickness.

No. 11.—Calcaneum, probably female.

From the monastery at Shakkah are derived three specimens:

A. Hyperostotic frontal bone of great thickness and weight, with prominent nasal bones and large orbital elevations. The forehead has not been unusually depressed.

B. Frontal bone, fragmentary on right side, with large frontal sinuses. The bones are thick, dense, and highly polished. The individual was smaller than A.

C. Supraoccipital bone very thick and dense, probably belonging to the individual numbered A, with whose character it agrees. The superior semicircular curved line is large and produced, and the occiput has been shelving. The lambdoid suture has been deeply denticulated.

All these bones contrast, in their osseous condition, very much with those from Bassus's Tower.

	A	B.	C.	D	E.	F.	G.	H.	I.	J.	K.
	Internal capacity.	Circumference.	Fronto-occipital arc.	Intermastoid arc.	Length.	Breadth.	Height.	Length of face.	Breadth of face.	Prop. of breadth to length.	Prop. of height to length.
No. 3	48.0	32.5	38.0	15.3	13.8	10.3	..	11.7	.90	6.7
No. 4	49.0	..	14.7	10.5	..	..	..	..

5. DESCRIPTION of REMAINS from YABRÚD. By C. CARTER BLAKE.

PART I. CAPTAIN BURTON'S COLLECTION.

ALL the equably ovoid skulls contained in the present collection appear to appertain to one race, and that one which presents the modern Syrian type of skull.

No. 1.—A large high dolichocephalous skull, with very slight superciliary ridges and flattened forehead: the present specimen is more like the young Syrian skull from Palmyra previously described and figured, than any skull which has yet come under my examination from the Holy Land. The contour forms an even curve throughout its whole fronto-occipital length. It is slightly asymmetrical, probably owing to the influences of interment.

The wisdom-tooth on the left side has been shed during life, and the alveolus is absorbed. The foramen magnum is small and round. The palate is rather high and vaulted, especially in its posterior portion. The nasal bones have been forwardly produced, arched, and the nose has been aquiline.

The sutures are all open, the alisphenoido-parietal suture on the right side being smaller than on the left. The coronal suture is very slightly serrated, and the denticulations on the sagittal and lambdoid are not excessive. There are no Wormian bones, nor the slightest traces of jugular eminences on either side. The supramastoid ridge is large and heavy; but although the individual has probably been an adult male, the mastoid processes are small. Supraorbital foramina exist on both sides. The frontal region is large, though the frontal bone is retrocedent. The ridges for the attachment of muscles are not pronounced. The age of the individual was probably about thirty or forty. As the next skulls for description accord closely with it in nearly all its distinctive characters, the description of this first one will nearly suffice for all. The mandible which probably appertains to this skull is low and narrow, the coronoid process being scarcely elevated, and the angle slightly exserted. The condyle being broken away, gives the sigmoid notch a greater appearance of shallowness than is really the case. All the teeth have dropped out since death. The sockets have been small, and those of the molar series are of the size in the Indo-European race.

No. 2.—With larger superciliary ridges than skull 1, the present agrees with it in nearly all essential characters. The sutures are all nearly closed, with the exception of the lambdoid. The result has been that the superior portion of the occipital bone above the semicircular line is posteriorly developed. The supramastoid ridges are prominent, and the mastoid processes

large, there being a great depth between the supramastoid ridge and the apex of the mastoid process. The digastric fossæ are deep, and cleave the mastoid processes on each side into two portions, each of which shows cancellous structure. There are, however no paroccipital or pneumatic processes. The auditory foramina are large. The palate is shallow and flat. The molar teeth in place are small. The orbits are depressed at their inferior and external margins.

No. 3.—Like the preceding, the present specimen belongs to the "long oval type." The dextral portion of the facial bones has been broken away since death. The bones are slender. The sutures are not deeply denticulated. The mastoid processes are small, and there are very slight paroccipitals. The molar teeth in place are not much worn, and exhibit the characters of the "white" races of mankind. The jugular foramen is largest on the right side, where its size is disproportionately great.

No. 4.—In friable condition, this large quasi-brachycephalous calvaria, with open frontal suture, shows indications of having belonged to a large and powerful male. The sagittal suture is deeply denticulated with large Wormian bone at the confluence of it with the lambdoid.

Skulls labelled Nos. 5 and 6 belong to one person—a young child, with bombate forehead and rounded orbits. The skull has been broken off through the basisphenoid bone. The nasal bones are well developed and arched. The nasal spine is prominent. The parietal bones are smoothly curved to the proboscis, which is much produced. The mastoid processes are very small, and the squamosal bone is small. The alisphenoido-parietal suture is broad.

No. 7.—The three broken fragments of parietal and occipital bones thus labelled do not call for especial remark, other than to note the fact, that they belong to a large adult individual, in whom the sutures have been deeply denticulated.

No. 8.—This fractured portion of calvaria merely comprises the frontal and portions of the parietal bones. The sutures are open. The frontal sinuses have been large, but the supraciliary ridges are not excessively developed. The skull has probably been less dolichocephalous than those previously described from the same locality.

No. 9.—A fragmental calvaria of a young dolichocephalous individual, in whom the frontal sinuses have not been much developed, and the bone is thin. The coronal suture shows a tendency to close early.

	A.	B.	C.	D.	E.	F.	G.	H.	I.		K.
	Internal capacity.	Circumference.	Fronto-occipital arc.	Intermastoid arc.	Length.	Breadth.	Height.	Length of face.	Breadth of face.	Prop. of breadth to length.	Prop. of height to length.
No. 1	56.0	36.5	38.0	17.4	14.0	11.0	..	11.2	80	63
No. 2	52.0	36.5	36.5	18.1	12.8	11.2	..	12.0	76	61
No. 3	49.0	35.0	35.0	17.2	12.6	11.5	..	..	73	66
No. 4	not less	..	than 15.2	..	..	..	..	..	..
Nos. 5, 6	47.0	34.0	..	16.5	12.3	10.0	..	9.6	77	60
No. 7
No. 8
No. 9

6. DESCRIPTION of REMAINS from YABRÚD.—PART II. MR. TYRWHITT DRAKE'S COLLECTION.

No. 1.—This large prognathic brachycephalous individual exhibits characters which indicate that it was of probably the Turanian or Turkish (Tatar) race, which occupied a large portion of Syria. The sutures are all open. The coronal is very slightly denticulated, and the sagittal shows signs of a large Wormian bone in its posterior portion. The large supraoccipital bone extends above a markedly-produced superior semicircular line, and stands out as a well-marked *probole* in relief from the rest of the bone. There are no paroccipitals. Traces exist of the original division between the basioccipital and basisphenoid bones. The palate is broad, but not deep, and the molar teeth have all either dropped out or become broken off since death. Oxide of iron has produced a chemical alteration in the dentine of some of the broken teeth yet in place. The supranasal notch is deep, and the nasal bones are curved forwardly. The maxillary bone is prognathic to a very great extent. The orbits are small, and the supranasal foramina have been converted into notches on either side. The surface of the skull around the coronal suture has bulged apparently since death, by the swelling of moist intercranial substance; and there also exists a slight carination along the length of the sagittal suture. The frontal bone is equally bombate. The individual has probably been adult.

No. 2.—A long dolichocephalous skull, which in some of its characters reminds us of the large meciostocephalic skull from Palmyra (No 2), before described. Much more prognathic, however, than the Palmyrene, it possesses the same character of large and long occipital region. The mastoid processes are small, and there are no paroccipitals. The palate is broad and shallow. The teeth have all been broken out since death. The

cerebellar cavity has been large, as is shown even by the inspection of the outside of the occipital bone. The orbits are small and rounded. The temporal squama is unusually flat on both sides.

No. 3.—Smaller than the preceding. The same characters are repeated in it, so that the description of No. 2 will apply, *mutatis mutandis*, to the present specimen. The coronal suture has been early closed. The nasal bones are forwardly arched. Only one tooth, *m* 1, is in place on the left side. There has been broken off a "process of Halbertsma," which has formed evidently a small condylus tertius,* but the friable condition of the bones has made it impossible precisely to measure the size of this abnormal ossification. The mastoids are small.

No. 4.—This large, almost brachycephalous skull, with prominent inion, differs in type from Nos. 2 and 3, and scarcely accords with that of No. 1. It is difficult to determine its race, and it may have been a mixed breed between the Syrian of Yabrúd and the Osmanli Turk. It may be possible that the present skull may belong to the Jewish race, as it affords no characters contradictory of this conclusion; but, as I have said, it is extremely difficult to predict the precise race to which it belonged. An adult male, the frowning beetle brows of the supraciliary ridges overhanging an aquiline hooked nose, and with an enormous development of the occipital region of the skull, give it a physiognomy at once robust and repulsive. The height of the skull appears comparatively great. The occipital condyles are broken away. The palate is flat and only slightly excavated. The teeth on the right side have chiefly been shed during life. The zygomatic arches are large, though the skull is not phœnozygous. The occipital foramen is large and round, concomitant with the large size and brachycephalous character of the skull. The maxillaries are orthognathic.

No. 5.—Fractured left parietal and occipital bones of a young dolichocephalous individual, with very thin osseous texture. The attachments for the muscles are not marked.

I have not seen the skull, which probably was labelled No. 6, from Yabrúd.

No. 7.—Occipital and fractured parietal bones, right side of a large, adult, brachycephalous man, in whom the bones are remarkably thick and strong. The mastoid processes are large. There are no paroccipitals. The lambdoid and coronal sutures have been entirely obliterated. The processes for muscular attachment are not so marked as might have been expected from a skull otherwise so robust. The tips of the asymmetrical cerebral lobes have projected far beyond the cerebellum.

* *Fide* "Anthropological Review", vol. iii, p. 215; and "Journal of the Anthropological Society", vol. v, p. cxvii.

	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.
	Internal capacity.	Circumference.	Ponto-occipital arc.	Intermastoid arc.	Length.	Breadth.	Height.	Length of face.	Breadth of face.	Prop. of breadth to length.	Prop. of height to length.
No. 1	52.5	36.0	39.0	17.8	14.9	11.5	..	13.3	.83	.64
No. 2	37.0	37.0	18.3	11.0	11.0	..	12.3	.60	.60
No. 3	49.0	34.0	34.0	17.4	12.0	10.5	..	11.3	.69	.60
No. 4	52.0	37.0	38.0	18.2	13.9	11.8	..	11.9	.75	.64

DISCUSSION.

Mr. HYDE CLARKE observes that, instead of giving the remarks he made, it may be more useful for the *Journal* to supply the details on which the observations were founded, and which admit of illustration. The number of characters is 520, and so far to be considered to be alphabetic, because of Θ there are 33,* of \div 21, of Ω 18, \mathfrak{H} 18, I 10. IL, W, Δ , O, \mathfrak{F} , L, II, and IIII, are frequent. \div is the cuneiform determination for a god or royal personage, and gives the type of \aleph , which differs so much from the Phœnician and Roman A or ∇ . Θ may be an original of Yod, and affords the type of that found in the Phœnician, Aramaic, Italic, Old Hellenic, and Palmyrene alphabets. \mathfrak{H} and O may prefigure the Phœnician Ayin, represented very well by the Roman U and O. There are many details, which show the Hamath type to be of very ancient character, and independent of the Phœnician, though having a common origin. It belongs to the epoch (not necessarily phallic) when Nature-worship characterised the comparative mythology. \div is unquestionably the phallus, and is more ancient than the Phœnician, or A form of the character, for which a word corresponding to phallus must have been the original name, for which "aleph", the bull, is only a substitute. O possibly represents the "yona". The Θ of the inscription is the lingam, or combined phallus and yona, constituting with the latter two a triad. This accounts for the peculiar form in the Phœnician, etc., and so different from the square Hebrew \aleph . In the Hamath character \div was the first type, Θ the middle, and O the last. In Hebrew at present Ayin is not the last letter, but in Greek Ω is. The Hamath inscription is calculated, not only to throw light on the simple question of an alphabet, but on the comparative mythology and philosophy of a most remote epoch. It confirms analogous observations made by me on the cuneiform characters to which it belongs. By me it has been identified as that peculiar form of cuneiform, first known in the Warka bricks, and called hieratic. The inscriptions are dedications to Baal, Nana, etc., by princes of Hamath. Looking to the form of the \div , and to other

* Mr. Clarke represents by these symbols the characters, which can be recognised in the reproduction of Captain Burton's transcript.

circumstances, there is every appearance that the character brought before the Institute by Captain Burton is, in its form if not in its date, one of the most ancient of its class.

Dr. CHARNOCK said that some of the figures on the drawings resembled the Phœnician letters “daleth”, “nun”, and “resh”, and the Hebrew “heor”, “cheth”, and “lamed”.

The CHAIRMAN said that it appeared to him that the efforts of Captain Burton as regards his researches in Palestine would be of great value in connection with those of the Palestine Exploration Society, of which he (Mr. Harris) had been a supporter from the commencement; following a somewhat different track to what they were doing, and taking up the anthropological department of the subject, as regards more especially the examination of the human remains there discovered. The Anthropological Institute was indebted to Captain Burton alike for his researches in that interesting country, and for the able paper which he had read before them that evening.

Mr. Luke Burke, Mr. W. B. Martin, and Mr. Franks, also offered a few remarks.

The author briefly replied.

The following paper was read.

RACIAL CHARACTERISTICS, *as related to CIVILISATION.* By
J. GOULD AVERY, M.A.I.

[*Abstract.*]

RACIAL characteristics are not the result of accident, habit, or climate, but are physical, material, and indelible. . . . Civilisation may be defined as the aggregate of those conditions of mental and social existence in which man differs from the brute. . . . Races will, however, be classed in this paper under three divisions—civilized, semi-civilized, and savage. . . . Nor can any definition of civilization be perfect which does not recognise moral characteristics. . . . Civilization is humanity. . . . It is proposed, then, to inquire (1), is there any sufficient evidence that any race now civilized has descended from savages, or that any savage race has become civilized and yet perpetuated its existence? 2. Has any civilized race degenerated into partial or total barbarism? 3. Has any partially or wholly civilized race exchanged its civilization for another? 1. In regard to the first inquiry, the ancestors of the Greeks, Britons, and Germans are alleged to have been savages... Refuted... The Sandwich Islanders, Maoris, Red Indians, and others have partially accepted civilization, but are dying out. The case of the negro is dubious.

The Caffre rejects civilization, and survives. Reason of this. . . .
Summary of argument.

2. Has any civilized race degenerated into partial or total barbarism? Egyptians, Greeks, Romans, Bengalis, Spaniards, Lapps, Eskimos. . . . Degeneracy denied. For illustration, imagine that Hindustan were suddenly denuded of its inhabitants, and that historical memorials had perished. The country would then present features similar to those of Egypt, Greece, and Rome, and a traveller admiring the remains of fortresses, palaces, railroads, and other great works, might infer that the country had formerly been peopled by a very powerful and intelligent race; and yet he would be mistaken. Those great works were mainly achieved by strangers and conquerors, and the mass of the native inhabitants had been only their instruments. Such was probably the case in Egypt, Greece, and Rome. The old races who achieved the greatness of their names have died out.... A similar process is now in progress in Turkey. Spaniards are not degenerate, nor Lapps, nor Eskimos. . . .

3. Has any semi-civilized race accepted another civilization instead of its own? Modern intercommunication has made different races well acquainted, and they have made rapid progress, but each along its own groove, preserving its ancient characteristics. Instance the Chinese and Japanese, emigrants of different nations in the United States, etc.

Racial characteristics are indelible. They may be overlaid and concealed by the progress of civilization and by surrounding circumstances, but will on emergencies burst forth afresh and assert themselves with undiminished vigour. Importance of the subject to the student and the statesman.

DISCUSSION.

Mr. LEWIS, while finding some points of agreement with the author as regarded the first part of his paper, thought many facts might be brought forward against the second part. One of these was the account given by Herodotus of the Lydians, who, though once the most warlike people of Asia Minor, were, after being conquered by the Persians, rendered so effeminate by the customs imposed upon them by their conquerors that their cowardice became proverbial. Turning to modern history, Holland might be mentioned as exhibiting an instance of national decadence, unaccompanied, however, so far as he knew, by individual degeneracy. The Jews, whom Mr. Avery had mentioned as being unchanged throughout the course of History, had certainly lost the martial and turbulent character which they possessed when inhabiting Palestine under the Roman government.

Mr. HUGHES objected to the author's definition of civilisation, as not expressive of that which was usually understood by the term, nor as even embracing what the author in his paper evidently included

under it. He would prefer some such definition as "that which enabled man to obtain the greatest results with the smallest expenditure of force." He showed that, in asking us to point out any instance of a savage race having of its own unaided efforts become civilised, the author was requiring a proof which, from the nature of the case, it was impossible to furnish; for if history could tell us of any such progress as a matter of observation, that implied the contact of a superior race to make the observations. That those who said that the human race had progressed did not hold that each civilised race had become such independently, but that the general advancement went on somewhere all the time; and whenever the more civilised came in contact with the ruder, under conditions in other respects equal, the more civilised either absorbed or exterminated the ruder. He criticised the statements of the author with regard to the divisions of races, showing that in some of the cases adduced the author called one part of the same race barbarous, and another civilised. With reference to the borrowing of civilisation, he pointed out how most of the history of the world was a history of transferred civilisation; and that Greece borrowed from Egypt, Phœnicia, and the East generally, that Rome borrowed from Greece, Britain from Rome, and so on.

DR. CHARNOCK thought the author of the paper had to a certain extent disproved his case. He said that uncivilised nations never became civilised, and civilised nations never became uncivilised. Mr. Gould Avery cited an ancient author, to the effect that the ancient Britons (who, by the bye, were not the ancestors of the present English people) were barbarians, but Mr. Avery did not agree therewith; and if the facts given by Mr. Lysons were correct, there is no doubt that the ancient Britons must have been a very civilised people. But what were most of the Keltic Irish of the present day but savages? On the other hand, Mr. Avery said that the ancient Germans were barbarians. Now, there is no doubt that the Germans had in modern times done their best to demoralise Europe, but at the same time, as compared with what they were anciently, they are a civilised people. And what did the author of the paper think of the ancient Peruvians and Mexicans? Their architecture proved that at one time the people of these countries must have been highly civilised. With regard to the Peruvians, the civilisation had grown up among the nation itself, and was not derived from any other people. The most ancient and most important of the monuments of Mexico were not, strictly speaking, Mexican, but were probably the work of the Toltecs. Now, if the latter still existed under some other name, they had ceased to build such monuments; and if they had been blotted out altogether, they must have first become deteriorated.

MR. AUGUSTUS GOLDSMID observed that he should not have troubled the meeting had it not been for the remarks of one of the speakers, which he could not allow to go forth to the world unnoticed. What that gentleman had stated as the law of England, and as if applicable to all cases—*i.e.*, that a female infant could be ravished with im-

punishment—might and no doubt was a fact in the particular case quoted, but was the result not of a defect in the criminal law itself, but in the law of evidence as applied to criminal cases, which had since been remedied, requiring in all cases evidence upon oath, founded upon a knowledge by the juror of the religious consequences of a false oath. The other assertion made, that anyone could take up a loaded gun and fire it at another without any kind of penal consequences, was also a confusion between evidence and fact, the law of England requiring that the jury should be satisfied of the intention of a party committing any criminal act; the punishment of such an offender depended on their opinion as to the intent. Mr. Goldsmid further observed that he should have been glad, had not the hour been so late, to have made some remarks on the very interesting paper they had heard, but he would content himself with observing, at all discussions of so large a nature, definition of the subject matter was the first thing needful, and that probably every gentleman in the room might give a different definition of civilisation. As for himself, he could not admit that to be civilisation which was not consistent with the physical wants and circumstances of those subjected to its influences; and improving a race off the face of the earth, whether more or less gradually, was not in his opinion either civilisation or progress.

The CHAIRMAN could not quite acquiesce in Mr. Avery's definition of civilisation, as the aggregate of social and moral conditions in which man differs from the brutes. In some qualities, he feared, we were occasionally below the brutes, and indulged in vices to which they are strangers. Mr. Avery had contended that no savage races were ever civilised. But surely our ancient British forefathers were as savage as any uncultivated races of the present day. The reader of the paper had also said that no race ever adopted the civilisation of another. But had not the ancient Britons adopted the civilisation of the Romans, the Romans that of the Greeks, and the Greeks that of the Egyptians? The modern Greeks and Italians it was, however, argued, were not the descendants of their civilised predecessors in their land. They possessed, however, many qualities and similarities which served to indicate the identity of the race. Holland had been spoken of as a degenerate country, compared with what it had been in former times. It was in ages past great in war; it was now great in commerce. But surely this was an indication of progress in civilisation, not of barbarism. The paper on the whole, however, was one of great value, and had elicited a very interesting and able discussion on the several points which it had so forcibly suggested.

Mr. AVERY said that he had brought forward this subject in the most sincere spirit of scientific inquiry. The paper was the result of the reading and reflection of many years. The points referred to by various speakers were so numerous, and the evening so far advanced, that he could not reply to them all. He would remark, however, that in defining civilisation, he had intended chiefly to explain the meaning which he attached to the word, and not to set up a standard for others, though he confessed he had never seen a better meaning.

But the points he was anxious to direct attention to were the three leading questions in his paper : 1. Is there sufficient evidence that any civilised race had barbarian ancestors? 2. Has any civilised race degenerated into partial or total barbarism? 3. Has any semi-civilised race adopted another civilisation instead of its own? The interest of these inquiries extends far beyond the limits of the present subject ; for if it cannot be shown that any race of men have emerged from barbarism to civilisation, it will be very difficult to prove that, according to the Darwinian theory, they have risen from the state of monkeys to that of men. In conclusion, he thanked the meeting for the kind manner in which the paper had been received.

The meeting then separated.

MARCH 18TH, 1872.

DR. R. S. CHARNOCK, *Vice-President, in the Chair.*

THE minutes of the last ordinary meeting were read and confirmed.

M. LETOURNEUR, Conseiller d'Etat, Algiers, and Dr. HAAST, of Canterbury, New Zealand, were elected Corresponding Members of the Institute.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the SOCIETY.—Jahrbuch der K. K. Geologischen Reichsanstalt, October, November, and December, 1871 ; Verhandlungen, ditto, October 1871.

From the AUTHOR.—Right-handedness. By Daniel Wilson, Esq., LL.D.

From JAMES BURNS, Esq.—Human Nature for March 1872.

From the EDITOR.—The Food Journal for March 1872.

From the INSTITUTE.—The Canadian Journal, February 1872.

From the EDITOR.—Nature, to date.

From the ACADEMY.—Bulletin de l'Académie Impériale des Sciences de St. Petersbourg, Nos. 2-6.

From the SOCIETY.—Transactions of the Royal Society of Literature, vol. x, part 1.

From the ASSOCIATION.—Report of the British Association for the Advancement of Science, Edinburgh, 1871.

From the EDITOR.—The Mining Magazine and Review for March 1872.

From the ASSOCIATION.—Proceedings and Report of the Geologists' Association, 1871.

From MESSRS. STREET BROS.—List of Newspapers published in Great Britain and Ireland.

From the EDITOR.—Archivo per l'Antropologia e la Etnologia.

From the SOCIETY.—Transactions of the American Philosophical Society, vol. xiv, part 3; Proceedings ditto, vol. xii, No. 87.

Dr. A. LEITH ADAMS exhibited a Series of Chipped Flints collected by him in the Islands of Guernsey and Herm. The author, in conjunction with the Rev. W. C. Lukis, Captain Lukis, and Dr. Murray, R.A., discovered large quantities under the superficial soil and beneath the sand dunes on the north-east of Guernsey, and on the summit of the eastern plateau of Herm, sometimes associated with hand-made pottery and flat water-worn stones, which showed a rough indentation for the thumb on one side, and two similar on the other, evidently for the tips of the fore and mid-finger, so that the implement might have been used for the purpose of chipping flakes from cores. In arranging a very large assortment of the chipped flints, Dr. Adams was enabled to trace the process of formation of the small, nicely-barbed arrow-head found in the cromlechs, and with neolithic implements in the islands, *i.e.*, from the core to the flake, then the rough point, the imperfectly-fashioned point, the all but completed arrow-head, and numerous nearly-fashioned specimens which had evidently been broken by the workmen when finishing them. Dr. Adams also drew the attention of the Society to a remarkable ancient raised beach in Guernsey, formed of chalk flints, and water-worn granite pebbles, several feet above the sea level, from whence evidently the greater part, if not all, the flints had been derived that were manufactured into implements during the existence of the polished stone age in that island.

Colonel LANE FOX read the following Report on a Collection of Implements, &c., from Saint-Brieuc, Normandy.

Having examined the articles submitted by M. Hénou, in accordance with the wish of the Council, I find amongst the objects found in the fortified camp of Saint-Brieuc a polished stone celt, six inches long, and two and a half broad; a whetstone, artificially rubbed on one side; an iron leaf-shaped spear head, one foot three inches long, and two inches broad, with socket; some fragments of turned pottery, which may be of the Roman or Gallo-Roman age; and some fragments of bone, apparently of the horse and other recent animals. These articles indicate occupation in distinct periods; and it therefore appears probable that the fortified camp in which they were discovered may, like

many in this country, have been constructed during the stone age, and have continued in use until a much later period. From the *Station de Granville* there is a stone celt of the usual type, somewhat more pointed at the smaller end than the last-mentioned specimen, four and three-quarter inches in length, and two inches its greater breadth; and a fragment of pottery, apparently of the Roman or post-Roman age. From the Fort of *Pérran* there is a whetstone, artificially rubbed on three sides, and another showing also marks of use. There are fragments of red pottery from this station. With respect to the other stones composing the collection, I am unable, without personally inspecting the locality, to form any opinion as to the manner in which their surfaces have become worn.

The COMPARATIVE LONGEVITY of ANIMALS of DIFFERENT SPECIES, and of MAN; and the Probable Causes which mainly conduce to promote this Difference. By GEORGE HARRIS, F.S.A., Vice-President of the Anthropological Institute.

HISTORY, both sacred and profane, attributes to mankind who lived in the early ages of the world, a longevity very far exceeding what we have experience of in our day. To some extent this difference may possibly be accounted for by the different modes in which eras of time were calculated. Possibly also the planetary system by whose revolutions periods of life were reckoned, may have undergone certain changes during that space of time. Easton, however, appears to give entire credit to the literal interpretation of the statement as to the longevity recorded of the patriarchs, and accounts for the limitation of the period of life since their time by remarking that "the productions of the earth were then of a different nature. The surface of the globe was in the first ages of the world less solid and compact. The period of man's existence may have gradually diminished in proportion as the surface of the earth acquired more solidity by the constant action of gravity."*

Dr. Whewell, the late able and learned Master of Trinity, accounted for the longevity of the patriarchs by the fact that Adam and Eve had eaten of the tree of life, and that its virtue was transmitted through several successive generations, till at last it became dissipated and lost, and man was reduced to a miserable tithe of his first possession.†

Lord Bacon, referring to the general period of the life of man,

* "Human Longevity", *Introd.*, p. xxvii.

† "Life; its Nature, Varieties, and Phenomena". By Leo. H. Grindon. P. 114.

asserts that "man's age doth exceed the age of all other living creatures."*

In the early records of our own country accounts are preserved of people living to a much greater age than they now do. Among the ancient Britons people commonly lived to the age of one hundred and twenty years. There are isolated instances in modern times of men living much beyond this age.

An able and well-written article on the general subject of longevity is contained in the *Edinburgh Review* for January 1857, which is attributed to Sir Henry Holland. It, however, throws some doubt on the reality of the great age asserted to have been attained by Jenkins and the Countess of Desmond,—one hundred and sixty-nine and one hundred and forty-eight years respectively; but confirms the account given of the longevity of Thomas Parr, and refers to the dissection of his body by the celebrated Harvey, who concluded from its appearance that he might have lived much longer but for the surfeit of food and changes in his habits which followed his removal to London, and to the kitchen of the palace.

Extraordinary and perhaps extravagant notions were entertained by the ancients as to the longevity of certain animals. According to a passage in Hesiod, referred to by Sir Thomas Browne,† ninety-six is the period of the life of a man, while that of a deer extends to above three thousand, and that of a crow to considerably beyond that period. But naturalists also of high repute and great credit, modern as well as ancient, afford us extraordinary accounts of the longevity attained by certain animals. Smellie, in his "Philosophy of Natural History," alludes to the great longevity of certain animals. Elephants live beyond two hundred years.‡ "In proportion to the size of their bodies, birds live longer than either men or quadrupeds. Swans have been said to live three hundred years."§ A goose is said to live beyond one hundred years,|| as do also ravens.¶ "Gesner gives an instance of a carp in Germany which he knew to be one hundred years old. Buffon informs us that he had seen carps of one hundred and fifty years of age, and he mentions one which he supposed to be two hundred years old."** Pike have been known to live to two hundred and sixty-seven years.†† The tortoise is said to have attained one hundred and seventy-five years,‡‡ and the falcon one hundred and sixty-two years.‡‡‡ A Greenland whale, we are told, will live from three hundred to four hundred years.‡‡‡‡ Parrots and several other ani-

* "History of Life and Death".

† P. 283.

‡ Ibid.

†† Grindon on Life.

‡‡‡ Grindon on Life.

§ P. 512.

** Smellie, p. 514.

‡‡ Gesner, quoted by Yarrell.

‡‡‡ Hufeland, "Art of Prolonging Life".

† "Vulgar Errors".

‡ Ibid.

mals, including some reptiles, are also said to afford extraordinary instances of longevity; while certain other animals, not apparently differing essentially in their nature and constitution from those to which I have referred, are as remarkable for the brief space to which their lives are ordinarily limited. Some trees are supposed capable of attaining an extraordinary age. The oak will live for fifteen hundred years, and the yew for three thousand two hundred.*

The opinions which have been entertained by different writers who have examined minutely into the subject, as to the principal causes of longevity both in animals and men, are deserving of attention, although no satisfactory conclusion has as yet been arrived at, and they differ essentially from one another in their theories on this topic. The famous Roger Bacon wrote a treatise entitled "The Cure of Old Age."† But the wonderful genius who six hundred years ago predicted travelling by carriages and by boats propelled by machinery, and navigating through the air, and to whom the inventions of printing and the telescope were also known, failed to produce any recipe for attaining long life beyond a few ordinary maxims regarding health. Paracelsus boasted that he could make a man live four hundred years or more if he might bring him up from his infancy, and diet him as he chose.‡ And Burton tells us in his "Anatomy of Melancholy" that some physicians hold that there is no certain period of man's life, but it may still by temperance and physic be prolonged.§ Lord Bacon, in his "History of Life and Death," discusses the causes of longevity, and he attributes the varieties in this respect to variations in the density of the vital spirits, and other causes affecting those spirits, and lays down the following maxims of prolonging life: "Alimentation from without, at least some other way than by the stomach, is most profitable to long life, if it can be done," canon xxiii; "Curing of diseases is effected by temporary medicines, but lengthening of life requireth observation of diet," canon xxx.

In his "Natural History"|| Lord Bacon also states that "It conduceth unto long life, and to the more placid motion of the spirits, which thereby do less prey and consume the juice of the body; either that man's actions be free and voluntary, that nothing be done *invita Minerva*, but *secundum genium*; or, on the other side, that the actions of men be full of regulation and commands within themselves, for then the victory and performing of the command giveth a good disposition to the spirits, especially if there be a proceeding from degree to degree, for then the sense of

* Grindon on Life.

† "De Retardandis Senectutis Accidentibus". Oxford, 1590.

‡ "Lib. de Vita Longâ."

§ Part i, sect. 2.

|| P. 292, "Experiment solitary touching prolongation of life".

the victory is the greater. An example of the former of these is in a country life; and of the latter in monks and philosophers, and such as do continually enjoy themselves."

Sir John Sinclair, in his "Code of Health and Longevity," vol. ii, gives a catalogue of one thousand four hundred and twenty "foreign publications on the subject of health and diet." In the "Appendix," vol. ii, to the above work are "rules by which a person will be enabled to prolong life to the latest period." Rule 10 advises people to refrain from dinner once a week.

Mr. Herbert Spencer* attributes the apparent absence of inherent decay in many trees, in fish, and in some reptiles, to their exceedingly small expenditure; trees and plants generally exhibiting no personal expenditure at all, whilst fish and certain cold-blooded reptiles show very little indeed.

The period occupied in the growth of an animal has sometimes been adopted as the test to what that of its life will extend. But this has been found to vary extensively in the case of different animals. Bodily strength, vigour, and health also fail to afford any certain indication as to the period to which life will reach, as the strongest and healthiest not unfrequently die early, while the frail and sickly turn out to be long-lived. Climate is said to occasion but little difference as to the period to which the lives of persons extend, although there is some difference of opinion in this respect, and certain climes appear to be peculiarly favourable to longevity. At one period Italy seems to have been remarkable in this respect. Cornwall, too, has been noted for longevity. Air and diet have always been supposed to exercise an important influence on longevity. Certain writers have attributed the longevity of the ante-diluvians to their sobriety and the simplicity of their manners, to their abstaining from eating flesh, and to the excellence of the fruits and herbs of those days, also to the purity of the air in those times.† But while some men who lived temperately, and even abstemiously, have lived to a great age, others who followed the very opposite course have been equally long-lived.‡ In general, however, notwithstanding a few exceptions, it appears to be generally admitted that "temperance, a placid and cheerful disposition, moderate exercise, and proper exertions of mind contribute in no uncommon degree to the prolongation of life."§

Some pursuits are also obviously much more favourable to longevity than are certain others. The clergy are proverbially long-lived; and, strange to say, the lawyers, too, frequently ex-

* "Principles of Biology".

† Rees's "Cycl." Art., Longevity.

‡ Smellie, p. 505. § Ibid.

hibit great tenacity with regard to life, as they do with regard to other matters also. According to averages taken by Dr. Caldwell, the lives of twenty mathematicians extended to seventy-five years, while those of twenty poets extended to only fifty-seven years.*

The quality of the air is thought by some to cause the chief difference in longevity.† It has indeed been proved by statistical returns that fresh air is one of the main conduces to it. In the case of wild winged birds, who partake of it to the utmost possible extent, this is probably one of the principal causes of their being so long-lived. And wild animals in general have the full benefit of it, and in its purest state. According to Easton, "fresh air is more immediately necessary to life than food."‡ He asserts also that "there is a vivifying principle contained in the atmosphere."§ In general there are more old men in high than in low countries.|| And yet in thickly-populated cities which are placed in a low situation some extraordinary instances of longevity may occasionally be observed.

Artificial food, both as regards meat and drink, may be supposed to be far less favourable to longevity than that which is in a natural state. Indeed, according to certain statements, the people of this highly-civilised age and country live mainly upon poison! Civilisation, however, may be presumed to be in many respects favourable to longevity, but that civilisation should be untainted by luxury. It should be such a state of civilisation as will provide against want, and afford regular exercise both to the mental and physical powers, but without leading mankind to indulge in those excesses of various kinds to which men in society are so frequently addicted.

Domestication appears to have a corresponding effect upon animals with what luxury has upon mankind. Lord Bacon tells us in his "History of Life and Death" that "in tame creatures their degenerate life corrupteth them; in wild creatures their exposing to all weathers also intercepteth them". But besides their exposure to the weather, wild animals are ever exposed to attacks from each other. But while tame animals are protected from many of these casualties, few domesticated animals are long-lived. The habits into which they are forced are contrary to nature. They take but little exercise. They feed on artificial diet, and their instincts become blunted. It is accordingly among wild animals that the extraordinary instances of longevity alluded to are afforded. Mr. Lankester, however, tells us that animals in

* Combe's "Principles of Physiology", p. 366; Caldwell on "Physical Education", pp. 84, 86.

† "Human Longevity", *Introd.*, p. xxi.

‡ *Ibid.*, p. 510.

§ Smellie, p. 510.

§ *Ibid.*

a domesticated state, which are supplied with food and protected from the attacks of other animals, may live much longer than in a state of nature.* But this proves nothing as regards their natural longevity. They are less liable to die from want or violence, which are mainly destructive in the case of wild animals, but their natural term of life is considerably abridged. In the case of wild animals there is, of course, much greater difficulty in ascertaining the precise period to which their lives are extended than in the case of those that are domesticated. This, however, may in many instances be successfully accomplished. Singular it is that in localities where wild animals abound we so seldom meet with instances of old and decrepit animals, and still less with the remains of animals that have died of old age. Among our domestic animals, instances of decrepitude from old age are very common, notwithstanding the alacrity with which they are killed off before they get too old to serve for domestic use. This apparent longevity of certain wild animals affords some support to the statements of the ancients as to the extraordinary longevity of certain animals, and also of the patriarchs, whose longevity has been accounted for by their living in a state of nature, as is the case with wild animals, feeding only on diet which is pure, simple, and unadulterated. On the other hand, savages, who certainly have certain advantages in this respect over civilised people, do not have their lives prolonged beyond the ordinary term. But then it should be borne in mind that savages, where they live in large hordes, have generally adopted some artificial habits which are at variance with nature and inimical to longevity; besides which, as is the case with the natives of New Zealand, they have often a difficulty in procuring sufficient and good food, and live in unwholesome dwellings, all which renders their case very different from that of the patriarchs.

Nevertheless, it cannot be doubted that if some particular animals do really enjoy a longevity far beyond the rest of their species, as to which there are assertions apparently well authenticated, there must necessarily be some special cause existing, either in their constitution or their mode of life, which occasions such longevity. And if this affects one animal, it will affect another; and if life may be prolonged in one case to a period far beyond its natural extent by the application of certain causes, it may be by a corresponding application in another case. If the life of a beast, or a bird, or a fish, may be extended to ten times its natural length by special agencies, is there any reason to suppose that the life of man is not subject to the same influences?

* “Comparative Longevity in Man and Animals”.

The late Dr. Monro went so far as to maintain, in his anatomical lectures, that "as far as he could observe the human body, as a machine, was perfect; that it bore within itself no marks by which we could possibly predicate its decay; that it was apparently calculated to go on for ever; and that we learned only by experience that it would not do so".*

Is it altogether irrational to suppose that some principle analogous to that of vaccination, or to that supposed to be contained in the very tree of life itself, may at some distant period in the progress of science be brought to light by which the animal frame may be revigorated and rescued from decay, and so fitted to endure, I will not presume to say for ever, but to an age corresponding with that to which we are told that both the patriarch and many animals have attained? Not improbably, indeed, there may be numerous natural medicines to which the instincts of wild animals spontaneously direct them, such as certain plants and springs, resort to which may have the effect at once of producing those particular results, and those alterations in their system, which capacitate it to endure for a long period. We see proof of this to a certain extent in certain cases, and it may reasonably be inferred that it exists to an extent considerably beyond our experience. If our science served us as efficiently as their instinct does them, we possibly might make corresponding discoveries with corresponding results. Possibly the patriarchs did possess this knowledge. Among certain savage tribes of men, whose instinctive powers are largely developed, while those of the reason are but little cultivated, a remarkable sagacity as to the medicinal properties of some natural productions has been occasionally exhibited.

In order to determine the points now at issue, we must inquire and ascertain as far as possible what is the real principle on which the comparative duration of life in every animated frame depends, and which appears to me to be as follows. In every such frame, commencing with the very germ itself, there is implanted a principle of growth or composition, by the operation of which, aided by nutrition and accretion, the frame goes on increasing and enlarging, rapidly at first, but gradually more slowly, and very languidly in old age. On the other hand, there is another principle contemporaneous with this, that of waste, or decay, or decomposition, which operates at first very slowly, but gradually increases in rapidity and strength, being very speedy and powerful in old age. The operation of these two principles is best and most clearly exhibited in the case of vegetable frames. But in those of animals and also of man it may be clearly perceived. So long as the growth in question exceeds

* Appendix to Combe on "The Constitution of Man", p. 434.

or keeps pace with decay, life is maintained; but whenever the progress of decay, or decomposition, exceeds that of growth, the frame declines, and death speedily ensues. Certain causes tend to promote the action of one of these principles, and certain causes tend to promote that of the other. Some of these causes are very powerful and obvious, and act in a direct manner. Others appear to be but feeble, and are scarcely perceptible, and act only indirectly. For instance, intemperance, incontinence, and irregularity of life, as also excessive toil, unwholesome food, and bad air, are directly calculated to hinder growth and promote decay. On the other hand, the opposite of these causes are as directly calculated to promote growth and retard decay.

The very essence of certain diseases is in reality but the triumph of decay, or waste, or decomposition, over growth or renovation; and therefore, if the complaint in question be of long continuance, it necessarily terminates in the dissolution of the frame, and in death. We see this more particularly and clearly evinced in the case of the disease termed consumption. People in reality die of old age, not when they have lived so many years, but when they are worn out—by the progress of waste and decay outstripping that of growth and renovation. As many, therefore, die of old age, from being worn out, at eighteen as at eighty.

It may, I think, be assumed that the real and only scientific test as to the capacity of any particular individual animal frame to last for a greater or less period of time, turns on the constitution of such frame, whether as regards its material texture, its temperament, its organisation, or its fluids, more especially the blood. Different animal frames no doubt differ extensively one from another in this respect. For instance, women are said to live longer than men, because “the bones, the cartilages, the muscles, as well as every other part of the body, are softer and less solid than those of men”.* But if animated beings of the same species differ one from another as regards their adaptation for longevity owing to a difference in their constitution, we may suppose that animated beings of a different species will differ far more extensively from the same cause. Thus fishes, we are told, “live during several centuries, because their bones and cartilages seldom acquire the density of those of other animals”.†

Comparative longevity, therefore, depends mainly on natural constitution. Nevertheless, inasmuch as whatever be the natural constitution, there are certain causes which will tend to abridge longevity, such as incontinence, intemperance, unwholesome diet,

* Smellie's “*Philosophy of Nat. Hist.*,” p. 509; Barr's *Buffon*, pp. 3, 4, 100.

† Smellie, p. 509.

and adopting many artificial habits; are there not also certain causes which in a corresponding manner, whatever be the natural constitution of the individual, will tend to increase longevity? To determine this point, we must decide the question how far artificial appliances are able to alter to any great extent those qualities of the frame already alluded to, on which longevity is supposed mainly to depend. In fact, the real and sole essential question at issue is this. Can any measure be adopted which will have the effect to any important extent of checking waste or expenditure, on the one hand, and of increasing growth or reproduction, on the other? This is a subject open to experiment in many ways of a most interesting kind. Certain waters, for instance, are said to have an effect upon the cartilages in the way stated; and it is to causes of this kind that the patriarchal longevity has been by some writers attributed. Probably their most powerful and direct effect is seen in the difference they appear to occasion in the duration of the life of animals that are domesticated and those that are wild.

Mr. Easton well observes that "the more a man follows nature, and is obedient to her laws, the longer he will live; and that the further he deviates from these, the shorter will be his existence".*

The question then arises, what are we to do in order completely and fully to follow nature, especially in our present highly-civilised, not to say luxurious, state of society, when so much that is entirely contrary to nature is peremptorily imposed upon us? Mr. Easton particularly recommends plenty of exercise, plain food, and fresh air. The two latter are, however, in many cases difficult to obtain.

The German writer, Hufeland, in his "Art of Prolonging the Life of Man," which is to a great extent based on Lord Bacon's work, already referred to, has arrived at certain conclusions as to the causes of the duration of life, which he considers to be dependent on the quantity of vital force contained in the body, and the promotion of the influences which contribute to decrease or diminish that force. He does not, however, even attempt to suggest any mode of producing or accelerating these influences, beyond stating that "a body which has the most perfect means of regeneration, both internal and external, will endure a longer time than one not provided with these means"; which is simply saying that a frame which is fitted to last a long time will last longer than one not so fitted, but without attempting to tell what we are to do to make the frame so last.

No doubt with our present limited scientific knowledge it appears far easier to shorten life than to prolong it. But if causes operate alike and with equal force in each direction, it must be

* "Human Longevity", *Introd.*, p. xi.

solely owing to our ignorance of the mode of rightly using these appliances that such is the case. We have proof positive, indeed, of the fact that "increased attention to the organic laws has greatly reduced the rate of mortality in Europe, and it cannot be supposed that further improvement is impracticable".* Considerable changes have accordingly taken place in the average duration of life in England during the last hundred years. At the early part of this period it was twenty-eight years. According to more recent tables it was thirty-two years; and it has been calculated that it may fairly be expected to extend to forty years.† From the tables of the average duration of life in Geneva during the last two hundred and sixty years, it appears that while from 1560 to 1600 the average was only eighteen years, from 1815 to 1826 it was nearly thirty-nine years.‡

Nevertheless, admitting all this, I must beg to suggest that it is clearly erroneous to contend that the increased average in the duration of human life affords any actual proof of increased longevity. All that it proves is, not that men are longer-lived than they used to be, but that owing to increased attention to sanitary laws, they are less frequently cut off by diseases resulting from the neglect of sanitary precautions. It is very possible, indeed, for mortality in a particular district to be very great, owing to the neglect of sanitary laws, and yet in the same district for remarkable instances of longevity to be found.

The entire question, therefore, resolves itself into the following simple points, the satisfactory solution of which will decide the whole matter at issue: 1. Are the statements which have been made to us by historians and naturalists as to the extraordinary longevity of the patriarchs, and other early inhabitants of the earth, as also of animals of a certain species, both in ancient and modern times, entitled to our credit? 2. Are the causes which have been assigned as occasioning the extraordinary longevity in question, such as may be reasonably supposed to have been productive of it? 3. Are these causes controllable in any way, and is it possible by any resort to artificial appliances extensively to increase or diminish longevity in the case of either man or animals?

The PHYSICAL CONDITION of CENTENARIANS, as derived from PERSONAL OBSERVATION in SIX GENUINE EXAMPLES. By SIR GEORGE DUNCAN GIBB, Bart., M.A., M.D., LL.D., F.G.S.

OPPORTUNITIES are seldom afforded of seeing centenarians, unless

* Combe's "Principles of Physiology", p. 387.

† Combe, "On the Constitution of Man", p. 234.

‡ Appendix to Combe "On the Constitution of Man", p. 434.

the trouble is taken of travelling long distances to various parts of the country; and it is extremely difficult to examine them thoroughly for scientific purposes, unless favoured with the assistance of friends or other persons who may be about them, willing to furnish information, and answer questions of importance and interest. Their great age is necessarily a great obstacle to conversation, unless their general health is good and their mental faculties unimpaired, which is not always the case. In the course of my lifetime, I have seen several centenarians in different parts of the world, but in six undoubted examples only have I obtained from personal observation sufficient reliable data, forming a series of new facts, to warrant my drawing some comparisons respecting their physical condition, that help to show why they have been enabled to reach a period of life so much longer than that allotted in the Mosaic record. I have been stimulated certainly with the desire to ascertain the condition of the upper respiratory organs in the first place, in carrying out a series of inquiries that have occupied my attention for many years concerning the larynx and epiglottis, which have been brought before the British Association for the Advancement of Science and other kindred bodies; but other conditions have not been neglected, which it is my purpose to consider generally in this paper: they are of interest not only to the physiologist and anthropologist, but to all classes of the community. It may be permitted me to observe here that, to some extent, the subject of this communication is comparatively untrodden ground; for, with the exception of what I have myself published elsewhere, no one has written anything upon the condition of the upper air-passages in *living* persons who have reached the age of 100 years; moreover, very few persons—probably none—have been enabled to examine so many as six individuals who have attained to such a great age for scientific purposes. The results of my investigations, too, are opposed to those views generally entertained as regards the changes which are presumed to occur in cases of such extreme old age.

Without going into minute particulars, the persons who furnished the data for the present communication were two males and four females; namely,

1. Jacob William Luning, born at Hamelvorden, in Hanover, May 19th, 1767, died at Morden College, Blackheath, June 23rd, 1870, aged 103.

2. ——— Eldrich, born in the county of Gloucester, in July (Dec. 10th ?) 1767.

3. Elizabeth Brown, born at Hemstead, Norwich, in July 1768, died in Paddington Workhouse Dec. 6th, 1869, aged 101.

4. Mrs. Ann Hogg, born at Rosskeen, county of Rosshire, Aug. 2nd, 1769.

5. Miss Wallace, born in Glasgow, July 1st, 1770.

6. Mrs. Mary Paterson, born in Carmannock, near Glasgow, October 3rd, 1770.

The first, Luning, reached the age of 103 ; the second, Eldrich, is 104 ; Brown, Wallace, and Paterson, are 101 ; and Hogg is 102. All are living except Luning and Brown ; Eldrich and Mrs. Hogg can be seen in London.

Regarding the accuracy of their ages there is not a doubt ; for I have been as anxious to satisfy myself upon this point as any believer in the unsupported assertion of Sir George Cornwall Lewis, made some years ago, that no one ever reached the age of 100 years. Some obstacles were thrown in my way regarding Eldrich ; but notwithstanding them I am quite satisfied as to his age.

I must here express my acknowledgments to my friend Dr. Muirhead of Cambuslang, near Glasgow, who accompanied me to see Mrs. Paterson ; to Dr. Stewart, of Southwick Street, Hyde Park, who introduced me to the nephew of Miss Wallace, at whose house in Stirling I saw her in August 1871 ; and to E. A. Conwell, Esq., who made me acquainted with Mr. Eldrich, of Peckham ; and not less to the Hon. and Rev. John Harbord, who kindly permitted me to see Mr. Luning in 1869.

The functions to which I chiefly directed my attention in all were the respiration and circulation, believing that the most perfect integrity of the lungs and the heart had a great deal to do with their age. This applied even more to the lungs than the heart, for the latter did not give any evidence of disease in any of the six, unless an occasional intermission in the beats at long intervals towards the end of life in those who died.

The *Respiration* was perfect throughout ; the chest expanded regularly and fully, similar to persons in the prime of life ; the chest capacity necessarily varied according to the size of the person—I doubt whether it was great in any, but it would have been impossible to test it in the usual way. The respirations were slow, comparatively, and during the expansion of the chest the ribs moved with the resiliency of ordinary adult life, and the cartilages were observed to separate and yield to the expansive force as is seen in young persons. As the breathing was not at all abdominal, so common in ordinary old age, and as the movement of the ribs and their cartilages was wholly unimpeded, the inference is a fair one that the cartilages had not undergone any alteration by ossific deposit ; that is to say, they were not ossified, and could have been as readily cut through with a knife as in persons of the age of 25 or 30. This fact of non-ossification of the cartilages of the ribs in persons of such advanced age is contrary to the doctrine hitherto held

by most writers, who have fallen into the error of taking it for granted that they necessarily must have been ossified because the condition is one so common in persons who die at the age of from sixty to eighty years. If the chest-capacity was not great, the chest was, at any rate, well formed, and the breathing was heard distinctly, and free from anything abnormal, wherever the ear was applied. The resonance on percussion was also good. All these together pointed to the fact that the lungs were in a most healthy condition, every portion of each lung performing its function in the most regular and uniform manner. There was not even any susceptibility to disease; but in Eldrich, aged 104, there was a hard cough, not frequent nor distressing, from a cold he had caught.

Being satisfied of the healthy condition of the lungs, it was necessary to inspect what I have already referred to under the name of upper air-passages, and these consisted of the larynx and the trachea, ordinarily known as the windpipe. In fact, what induced me in the first instance to examine the oldest people I could come across was to ascertain the position of the cartilage at the top of the windpipe, known as the epiglottis, concerning which I have already brought two or three communications before the Anthropological Society, which are published in the first and third volumes of their *Transactions*. My anxiety concerning the position of this cartilage in such old persons was considerable; for if I had found that it was pendent in any of them in place of being vertical, then some important views that I had brought forward, relative to longevity beyond seventy years, would have become untenable. The epiglottis in every one of the six persons possessed its natural vertical position and leaf-like shape, and seemed to be well placed at the root of the tongue: the consequence was, that the upper part of the larynx was fully open, and no impediment was offered to the freest admission of air for the purposes of breathing, and, under such circumstances, *ceteris paribus*, the most perfect arterialisation of the blood took place in the lungs, and perfect health was maintained throughout a long life. Had the epiglottis been pendent or recumbent in any one of these aged persons, life would not have been prolonged beyond seventy, as I have had already occasion to dwell upon before several of the scientific associations.

The larynx, or little box which we can all readily feel in our necks, was healthy and well formed; the vocal cords were perfect in their action, of suitable length according to sex, possessing the colour and appearance as seen in middle age. Their wide separation permitted of a good view of the trachea, which, from its internal appearance and soft feeling in the neck, led me

to the conclusion, that the rings which entered into its formation, as well as, I may say, the rings of the larger bronchial tubes, were not at all ossified, however much or little calcareous deposit might actually be found to exist. This, too, is contrary to the view generally entertained, and will equally apply to the cartilages of the larynx, for they felt soft and yielding in the neck, quite different to the hard and resisting box, the result of extreme calcification and ossification combined. I am not prepared to deny that even in a soft, yielding larynx these last two conditions may not be present in some proportion in the more solid cartilaginous portions, for such was actually the fact in a larynx taken from a man 103 years old, and I have figured the appearances in one of my medical works.*

The voice in all was good, clear, sonorous, or fairly audible, firm, and perhaps I might say powerful, although a little cracked and tremulous in two, especially in Luning. In him, however, it was most powerful, although not very distinct, and the vocal cords had a tinge of yellow instead of the greyish-white, as seen in most of the others. In Eldrich, on the other hand, the voice was smooth and melodious, not loud, harsh, nor rough. In Mrs. Hogg it is so loud and powerful as to be heard above all those about her. In Miss Wallace the voice was not unduly loud; the speech was clear and distinct, though a little fast and childlike; she was the shortest and smallest of the six centenarians. Mrs. Paterson had a good, clear, and strong voice; whilst in Brown it was a little tremulous and weak.

The chest-capacity, therefore, judging from the voice, as indicating bellows-power, was good in Luning, Hogg, and Paterson; and I should say not less so in Eldrich, from his breadth of chest, although his voice was soft and melodious. The breathing during conversation was not short nor hurried in any.

To turn next to the *Circulation*. The heart was healthy, and free from any unusual sound; the beats were perfectly regular, except towards the termination of life in the two who died. The action of the heart was moderate and quiet, but not feeble, and was not influenced by any excitement. The size of the organ was not increased, so far as I could make out; and the heart was free from fat, which, when present, is a source of great trouble in old persons. This latter circumstance, although it would not prevent moderate calcification of the blood-vessels, as I inferred might exist in Mrs. Paterson, was nevertheless a saviour of all the tissues of the body, and prevented the occurrence of those changes which tend to shorten life, and need not be entered into here, as they are pathological. There was an absence of the atheromatous changes commonly observed in old age; and I

* "Diseases of the Throat and Larynx." Second Edition.

must here say, that if calcareous deposits are found to exist between the coats of the blood-vessels, they are not necessarily preceded by atheromatous deposits—a doctrine that has long become exploded, and need not be discussed here. The pulse at the wrist was soft and yielding, a little less frequent than in young persons: it was 54, or thereabouts, in Mrs. Paterson, in whom the artery felt a little harder than in the others, but it was nevertheless compressible, which may indicate simple thickening without any trace of calcification. The vessel was a little hard likewise in Eldrich, but still compressible.

The heart and its blood-vessels throughout the body may be taken, therefore, as healthy, and free from any of the changes usually observed in ordinary old age, a view opposed to that hitherto entertained regarding centenarians, but still further confirmed by the *post mortem* inspection of an old man who died at Southampton, aged 103, by Dr. Beith, R.N., who found every organ of the body healthy except the bladder.

The absence of atheromatous changes in any part of the body of the six centenarians explained the appearance of the countenance in all, which showed an absence of deposit under the skin of any of the elements of fat. This, in the males especially and in Miss Wallace, imparted a sort of *silvery expression*, with apparently great toughness of the skin, which I deem to be an essential peculiarity in persons over ninety, at any rate; but it was most striking in the males, and I can never forget it: Miss Wallace possessed this expression more than any of the other females. Luning had the appearance of one of the oldest men I ever saw in my life, and just such as I could fancy in a person of his age; but it was completely eclipsed by that of Eldrich, who was a veritable patriarch, with locks of silvery grey hair reaching to his shoulders, and a beard of a similar colour, his countenance at the same time being one of angelic benignity and sweetness, altogether giving him the look of extreme veneration. Indeed, I must say I never saw a sweeter expression on the face of any human being of his sex before. There was no mistaking his great age; he bore a striking resemblance in the form of his face, head, and features generally to the late Sir James Simpson of Edinburgh.

The function of *Digestion* was performed in all with perfection; none had ever reason to complain of any deficiency of power in this respect. The gastric and other secretions seemed to be possessed of strong powers to act upon whatever was taken in the way of food, and there was always an appetite for food, the general health being invariably good. The frequency of eating varied somewhat in most of the six, for some were satisfied with from three to four meals a day, whilst Miss Wal-

lace ate seven times in the twenty-four hours, although she had a difficulty in mastication, yet her teeth were good. She ate raw cucumber up to three or four years ago, and is fond of gooseberries and other fruit. The eldest of the six, Eldrich, had three meals only a day, with half a pint of beer for dinner, and afterwards smoked a pipe of tobacco, which he greatly enjoyed. It is well known that if the food is not properly masticated indigestion is generally the result, and without sufficiently good teeth mastication is not easy. It may be mentioned that all had fairly good teeth, except Mrs. Paterson, who had none at all, and whose food was given in a suitable form to remedy this. But in the others the teeth were the same they had masticated with when young; and in Mrs. Hogg so perfect and white were they that they resembled a set of new teeth. From what I could gather, the diet in all was simple and plain; Luning generally consumed a large piece of beef-steak daily.

Having said this much relating to the three great functions of life, a few words will not be amiss upon the *Special Senses* and *Mental Faculties*, and, firstly, of the *Sight*. In all six it was perfect: the eyes were quite clear, mostly of a grey or bluish-grey colour, free from any arcus or annulus, as is usually seen in persons over seventy—that is a circular ring, or only an arch of a whitish or yellow colour along the outer margin of the cornea, or transparent portion of the eye; if I might venture to say so, there was a pale narrow whitish rim around the extreme margin of the entire cornea, at its junction with the sclerotic coat, but it could not be pronounced an annulus. With this clear condition of the eye, the sight was excellent, and all could read ordinary type without spectacles, except Mrs. Paterson, who had used them for fifty-five years, since she had an attack of erysipelas of the head.

The sense of *Smell* in every one was fairly good; none used snuff nor chewed tobacco, and none smoked with the exception of Eldrich, as already mentioned.

The only faculty that seemed to be impaired was *Hearing*, and that varied somewhat. Luning had been deaf for twenty-five years, but could hear very loud tones; in the other old man, Eldrich, the hearing was most acute, for he could hear the slightest sound. Mrs. Hogg is deaf now, but can hear moderately loud speaking. Brown's hearing was better, for though she was slightly deaf she could hear ordinary conversation. Wallace and Paterson hear quite well to the present hour. The hearing, therefore, in the six is, that four could hear quite well, and two were deaf.

The *Mental Faculties* were active and unimpaired in all, which would seem to be a general rule with all centenarians, as the

fact is invariably mentioned when a record of the death of one appears in the newspapers. This shows that the great centre of the nervous system, the brain, is perfect in its integrity, and nothing more thoroughly testifies to the correctness of the great and important fact of a complete absence of any of those changes common to ordinary old age. Yet these changes have been believed to be present in an extreme degree in centenarians, but I think that has been completely disproved; for if any of them were present, the mental faculties would become dim and obscured and the intelligence imperfect. Whereas in the six centenarians not only was this last condition perfect, but the memory was good, indeed very good, except perhaps in Luning, and I infer that the difficulty in him was the deafness. I regret to say that the intelligence is now becoming a little impaired in Eldrich, 104 years of age, and fear that this is the precursor of more serious changes.

Taking, then, the condition of mind and body presented by the six centenarians who have formed the subject of this paper, it may be said that in all there was an entire absence of those changes which are usually observed in persons ordinarily approaching the allotted period of threescore and ten. These changes have reference chiefly to the condition of the blood-vessels and other tissues, into which I need not enter in this place. Suffice it to say, that perfect composure of mind throughout life has had much to do with the condition of body permitting the attainment of such extreme longevity; and, so far as I have been able to make out, there has not been present any hereditary condition likely to interfere with Nature's laws under such circumstances. In one of the six individuals, Miss Wallace, longevity would appear to be a family peculiarity, for she has a sister alive upwards of ninety, and lost one a short time back at the age of ninety-six; her brothers, Sir Maxwell Wallace, one of the heroes of Waterloo, and Mr. Wallace, of Kellie, of cheap postage notoriety, died some years ago at the age of eighty.

Physically speaking, there is nothing to prevent the extreme limits of longevity being reached in those persons in whom all the conditions favourable to its occurrence exist, and it matters not whether the climate is severe or mild. I mention this, because numerous instances are related of extreme longevity in such a severe climate as Russia and in Sweden and Norway. The six cases here noticed occurred in our own more temperate one: Luning was a native of Hanover, but he had been the greatest part of his life in England; the others were natives of England and Scotland.

It may be taken as an established fact that, to reach centena-

rianism, not only must the constitution be naturally healthy and good, but all the great functions of life must be performed without impediment or derangement of any kind. If the special senses are co-ordinately good and acute, they assist in keeping up the conditions favourable to longevity. But, one change is especially antagonistic to extreme longevity, and it is the most important one; namely, the predominance of the atheromatous element which leads to those changes in the blood-vessels which close life at the natural period. Simplicity of regimen, and the avoidance of those elements of food—such as starch of potato, malt liquor, and cheese—which, in their assimilation, help to bring on these changes, may ward it off altogether; I believe that the six centenarians who have formed the subject of this paper were in some way particular on this point.

Howsoever extraordinary it may appear, it seems to me that most centenarians are tired of life: they wish it were at an end; it seems as if it were a burden; they feel isolated among their fellow-beings, and are thankful at last when it pleases God to remove them. Such I gathered in my conversation with Mrs. Hogg, who is still alive, and who is willing to live as long as she is permitted, although her life now cannot be considered an envied or a happy one. The lot of the other two females and the male is more contented, as they are surrounded by members of their family, who look after them with care, and treat them with the utmost kindness.

POSTSCRIPT.—Since the foregoing paper was read, I have seen three additional centenarians; namely, Sarah Skelton, aged 102, living in Bond Court, Walbrook, City of London, where she was born on May 24th, 1770; Sarah Debenham, aged 103, whom I saw at Sudbury, Suffolk, in company with my friend the Rev. Herbert Smith, and who was born at Melfort, near Bye, in 1769; and Mrs. Ann Slocomb, aged 100, whom I visited at Isleworth on May 30th, her birth having occurred at Send, near Guildford, April 17th, 1772.

The result of my examination of these three females confirms the conclusions I formed relative to the six centenarians described in the foregoing paper, so that I have nothing to alter or to retract. The mental faculties of Skelton and Slocomb were perfect; not so with Debenham, who had been imbecile from childhood, and an inmate of the Sudbury Workhouse for probably the greater part of her life; nevertheless, in other respects her special senses were acute, and her bodily activity remarkable, and she possessed a fair amount of intelligence. Skelton and Slocomb had coughs, and I suspect the former is now

phthisical. Slocomb is a little deaf, and has used glasses for many years; the others see well without them, and likewise hear well. Debenham and Slocomb have no teeth, Skelton has some. The voice is smooth, clear, and distinct, in all three—if anything, rather loud in Skelton—and the vocal apparatus in each is perfect. The silvery expression of the countenance was present in all—unmistakeably so in Debenham; and no changes had occurred in the heart and blood-vessels, the pulse at the wrist being soft and compressible, without any feeling of hardness to indicate thickening of the arterial coats.

Of the nine centenarians thus examined, two were males and seven females, but no conclusion can be formed from so small a number of the relative frequency of the sexes who attain to such a great age.

DISCUSSION.

Mr. T. McK. HUGHES remarked that it seemed agreeable to common sense that extreme longevity should occur in the case of those individuals whose organs for carrying on the circulation of the blood—that great restorer of the system—as well as those organs whose office it was to purify the blood, were in the most perfect working order. With regard to the supposed traditions of longevity in beasts, birds, and fishes, he would like to see clear evidence of the fact in every case adduced. He was quite aware of the popular belief, and quoted a Welsh triad to the effect that three times the duration of a dry fence was the age of a dog, 3 dog = man, 3 man = horse, 3 horse = raven, 3 raven = stag, 3 stag = oak. But, in that case, he thought the story might be explained by reference to the habits of the animals named. In the case of the raven, as the same pair of birds returned to the same crag to build year after year, and, as often as one died, the other brought a new mate, and the young were always driven away, it was easy to see how the father might hand down to son the story which he had himself heard in childhood, that the same birds had returned there for many generations of men. So in the case of the stag, as an animal of about the same age would always be the leader of the herd, the story would be believed and told that the same individual had led all the deer on that mountain side as far back as tradition could go. He thought that there were plenty of authenticated cases of longevity in plants and animals, and quoted the case of an albatross taken with a ring through its bill, bearing an inscription which, if put in at the date inscribed, proved the bird to be of great age. The rings of growth in a tree were more trustworthy tests of age; but in scientific inquiry we should reject all cases that are not well established.

Mr. C. WALFORD said he considered the subject of longevity especially suited to the consideration of the Anthropological Society, more particularly that aspect of the case which had been presented, he believed for the first time, by Sir Duncan Gibb this evening. That was the

aspect of the case which commended itself to scientific men. There was something really to investigate—something to learn. The old and traditional view of longevity as presented by the first paper was too vague. Hufeland might be quoted for ever in favour of old age, and Cornaro might sing the praises of long life to the end of the chapter, but people would not believe in it until it had received some such demonstrations as Sir Duncan Gibb had given to it this evening. The want of such proofs had appeared to justify the otherwise untenable statements made by men of generally good information, that there were no real and undoubted cases of centenarianism. It required, indeed, a good deal of boldness to make such an assertion, when instances of centenarianism were found in the records of the numerous tontines instituted in this country, in which young and well-known lives were generally put forward as nominees, after exact and indubitable proof of birth, the dates being recorded, and the progress of each life being narrowly and jealously watched throughout its entire course. Were an instance required, he would name the well-known Cunningham family, of Edinburgh. Anyone who pretended to doubt if ever an authentic instance had occurred, might satisfy himself in this case. Besides, where did the objectors draw the line of the limit of life? Do they admit 80, or will they tolerate 90 or 95? Do they ever go so far as 96, 97, 98, 99, and then suddenly stop? There was a good deal of clap-trap about these non-believers. He (Mr. Walford) had had occasion to investigate the subject very carefully for the purposes of a work he was now editing—the “Insurance Cyclopædia.” He had dealt with some 6,000 recorded cases of longevity. Of these some were accurate beyond all question; many were open to doubt, but not to the charge of impossibility. One case established, and the probabilities are good for a percentage of the entire population. The location of centenarians was a matter of much interest. He might some day trouble the Society with a paper on that subject. On the whole, he was well satisfied with the treatment the subject had received on this occasion. It was very decidedly a step in advance.

The CHAIRMAN said if Lord Bacon had asserted that man's age exceeded that of all other living creatures, he must have included the patriarchs in his calculation. Without doubt the age of many animals exceeded that of man. The author of the paper seemed however to have corrected the assertion in a subsequent part of his paper. He (the Chairman) fully agreed with Mr. Harris, that people were really old when they were worn out, although they might not be very aged. Of course, when the peculiar combination called organic matter ceases, it becomes inorganic, and life is gone. He did not however agree with the author of the paper that as many people die from being worn out at 18 as at 80. It would be nearer the mark to substitute 30 or 35 for 18. No doubt intemperate people were often short-lived. A man who began to drink at 30 would frequently not last more than 8 or 10 years; a woman who commenced at 20, would often live 16 years; but those who died had not good constitutions. A great many drunkards were long-lived. Some lived to 100 and upwards.

The Irishman Brawn died at the age of 125, having lived in a state of intemperance for the previous 100 years, a fact which is recorded on his tomb. Mention of this case and of drunkards who had died very aged is made in Dr. Prosper Lucas's work, "*Sur l'Hérédité Naturelle.*" As the author of the paper stated, in Italy and Cornwall there had formerly been a great deal of longevity. Longevity in Cornwall seemed to be proved by the fact that in the ancient Cornish language the term *gur gog* was used for great-grandfather's father, and *hen gog* for both great-grandfather's father and great-grandfather's mother. There are, however, many other parts of the globe noted for longevity, as Great Britain generally, France, Hungary, Finland, Norway, Russia, the Brazils, and India. Great longevity is also found among the Hottentots and negroes. According to French statistics, there are in France 170 centenarians to 10 million people (about 1 in 62,500); in England, 1 in 3,300; in Russia, 1 in 245. In the matter of climate, Dr. Lucas considered that "influence" has been mistaken for "cause;" and Buffon and others are of opinion that, as a rule, great longevity had its origin in the germ, and that age is not affected either by race, climate, food, comforts, diseases, or occupation. There is no doubt that longevity is hereditary. Rust, the physiologist, had never known an octogenarian in whose family there were not frequent cases of longevity. Mr. Harris spoke quite seriously of the age usually assigned to the patriarchs. Now, according to some authors, in Biblical times the year was a lunar, not a solar year. Others asserted that the ancient Oriental year was a period of three months, or at most of eight months. According to this, Methuselah, who died at 969, might have been about 592, 222, or 74 years of age, which latter is not a very great age after all. Indeed, if the assumed age of the patriarchs be correct, it is against our own experience, it being an admitted fact that the duration of human life has increased. The age of the patriarchs was by some attributed to the effect of certain waters upon the cartilages. It was however most probable that after the time of Noah the patriarchs did not drink water at all.

Mr. E. CHARLESWORTH exhibited a curious series of fossils from the Crag of Suffolk, the description of which, for want of time, was postponed till the next meeting, 8th April.

The meeting then separated.

APRIL 8TH, 1872.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

ROOKE PENNINGTON, Esq., LL.D., Bolton-le-Moors, was elected a Member.

The following presents were announced, and the thanks of the meeting voted to the respective donors :—

FOR THE LIBRARY.

- From the IMPERIAL ACADEMY.—Compte Rendu de la Commission Impériale Archéologique pour l'année, St. Petersburg. Atlas ditto, 1869.
- From the EDITOR.—American Eclectic Medical Review, Dec. 1871, Jan. and Feb. 1872.
- From the SOCIETY.—Proceedings of the Royal Geographical Society, vol. xv, No. 5, vol. xvi, No. 1.
- From the ASSOCIATION.—Nineteenth Annual Report of the Mercantile Literary Association of San Francisco, 1871.
- From the EDITOR.—La Revue Scientifique, Nos. 40 and 41, 1872.
- From the EDITOR.—The Food Journal for April 1872.
- From the ASSOCIATION.—Journal of the Royal Historical and Archæological Association of Ireland, October 1871.
- From the EDITOR.—The Mining Magazine and Review for April 1872.
- From JAMES BURNS, Esq.—Human Nature for April 1872.
- From the AUTHOR.—Über prähistorische Gräber Polens, by Dr. H. Beigel, M.D.
- From the SOCIETY.—Sitzungsberichte der Physicalisch-Medicinischen Societat zu Erlangen.
- From the ACADEMY.—Memoirs of the American Academy of Arts and Sciences, vol. x, part 1.
- From the MUSEUM.—First, Second, and Third Annual Reports of the Trustees of the Peabody Museum, 1868-69-70.
- From the AUTHOR.—An Account of the Freshwater Shell-Heaps of the St. John's River, East Florida, by Dr. J. Wyman.
- From the AUTHOR.—Zanzibar, 2 vols., by Captain R. F. Burton, F.R.G.S.
- From EUGENE MORRIS, Esq.—A Catalogue of the Ethnographic Museum at Copenhagen, 1870.

FOR THE MUSEUM.

- From EUGENE MORRIS, Esq.—3 Caffre necklaces, 1 shell necklace and a bone fish-hook, 1 divining necklace of sticks, 2 finished and 1 unfinished pipes, 1 apron, a Caffre spear, Scandinavian beer-jug.
- From T. J. HUTCHINSON, Esq.—12 Peruvian skulls.
- From Dr. J. BARNARD DAVIS.—4 Peruvian skulls.
- From MORTON ALLPORT, Esq.—A skeleton of a Tasmanian aborigin.

Mr. HYDE CLARKE made some remarks on the Hamath Inscriptions; but he has thought it of more use to the members to send the following note of the result of his investigations.

The Hamath inscriptions are written in alphabetic characters. These are not Phœnician, but belong to an older class, and

allied to the Himyaritic (of Adamæ Arabia, of Axum and Abyssinia, of Babylonia, and represented by the Ethiopic and Amharic or Abyssinian of the present day), but nearer to the Lybian of Carthage and Algeria, now represented by the Berber and Tamashok alphabets. The Hamath has also relations with the Cypriote, Etruscan, and Celtiberian. The characters are however distinctly of the hieratic, or old Babylonian cuneiform class. Two inscriptions are turned upside down (Nos. 1 and 2).

There can be little doubt that No. 5, containing the two hands, records a tomb or temple, stating the genealogy of the defunct, and including, as the hands indicate, a dedication to the gods, most likely Moloch and Baal. Two other inscriptions (Nos. 2 and 3) are also of the same class.

Mr. Clarke has not yet identified the language, but considers it may be Caucaso-Tibetan. The palæographic characteristics are rather in favour of the great antiquity of the inscriptions than otherwise; and it is quite possible they may be older in date than the Moabite Stone as they are older in character.

MR. EDWARD CHARLESWORTH, F.G.S., exhibited and described a series of remarkable objects found in the Red Crag Formation of Suffolk, simulating human workmanship. Specimens were laid upon the table of sharks' teeth of the genus *Carcharodon*, which appeared to show traces of action of some artificial force that had perforated the teeth through their thickest part, almost identical in character with perforations exhibited in the sharks' teeth made by the South Sea Islanders of the present day. Mr. Charlesworth pointed out the conditions under which boring mollusca, as *Pholas* and *Saxicava*, perforate the texture of stones or other solid substances, and glanced at the perforating action of burrowing sponges (*Cliona*) and destructive annelides (*Teredo*). Reasons were given at length why these could not have produced such perforations as those now exhibited. The most searching and cautious examination was also bestowed to demonstrate that the perforating body, whatever it was, was coeval with the crag period; *i.e.*, that specimens existed in which the true crag matrix filled up the hole from end to end, thus showing that it had been immersed in the crag sea after the period of its perforation. It was necessary, therefore, to eliminate all these inadequate causes, and to own that we have to search for some other agent which could have produced the extraordinary perforations in question. Mr. Charlesworth did not himself suggest that it was demonstrably proven that the perforations were produced by human agency, but he read a letter which Professor Owen had written that day, saying that, after careful examination, "the ascription of the perfora-

tions to human mechanical agency seemed the most probable explanation of the facts." The author had no theories to offer himself, but rather invited suggestions from every quarter.

DISCUSSION.

Mr. WHITAKER suggested that the holes might be due to decay, occurring as they did in the basal and more decomposable part of the teeth, and almost wholly in the thinner sort of teeth. He noticed that in one of the specimens there were holes in various stages of formation, from a slight indent to a clear perforation; remarked that the fact of the holes occurring chiefly in the middle of the fang might be explained by there being a line of weakness in that part; and concluded by requiring the greatest caution to be exercised in establishing the geological position of the bed from whence the specimens came.

Dr. COBBOLD stated that he deemed himself particularly fortunate in having had an opportunity of inspecting Mr. Charlesworth's specimens; for whilst hitherto, by the examination of true coprolites, of a kind totally distinct from the pseudo-coprolites or phosphatic nodules of the crag, he had sought in vain for evidence as to the existence of entozoa in past geologic times, he thought he now detected indications of the former presence of parasites in the cavities or borings of these shark's teeth. He might be altogether in error, but he respectfully submitted that these cavities would probably turn out to have been produced by trematodes which had encysted themselves after the fashion of their tribe. Although it might be said with truth, perhaps, that no entozoon had hitherto been known to take up its abode in the bones or teeth of fishes, it was notorious that parasites had no difficulty in getting access to the skeleton of the higher animals. Thus, in his treatise on the Entozoa, he had pointed to the remarkable habit of the larvæ of the *Tenia echinococcus*, which not unfrequently take up their residence in the shaft of the human tibia. However far-fetched the idea might seem to some members of the Society, he strongly suspected that a species of bisexual fluke had occasioned these so-called borings. Not improbably it would be a form of parasite allied to Professor Van Beneden's *Nematobothrium filarina*, which lies concealed in cysts of the lining membrane of the branchial cavity of a species of *Sciæna*. He would also add that there were several other species of bisexual trematode which temporarily encysted themselves in the region of the mouth, pharynx, and branchiæ of fishes. Thus, Wedl and Wagener found a monostome (*Wedlia bipartita*) in cysts connected with the gills of the tunny (*Thynnus vulgaris*), whilst another kind of fluke (*Koellikeria fillicollis*) has been frequently observed in open follicles in the branchial cavity of Ray's bream (*Brama Raii*). It might be that these views would gain no acceptance with naturalists; but Dr. Cobbold considered that it was fairly open to him to suggest parasitism as a cause of these cavities. At all events, he should entertain this view of the case until some other explanation of a more satisfactory kind had been offered. He had enjoyed abundant opportunities of

examining shark's teeth from these falsely called coprolite diggings of Suffolk, and he was well acquainted with the derivative conditions under which the teeth had been deposited.

Dr. COLLYER observed that it was a notorious fact that uncivilised men on every part of the earth's surface were actuated by similar propensities, and performed acts which were identical in their character. The same necessities had prompted the New Zealander, the Sandwich Islander, and the North American Indian, to habits and customs in common, though no intercourse has ever existed between them. He had carefully examined by aid of a powerful magnifying glass the perforated fossil shark's teeth, found in the Suffolk crag, exhibited by Mr. Charlesworth. The perforations, to his mind, were the work of man. His reasons were—First, the bevelled conditions of the edges of the perforations. Secondly, the irregularity of the borings. Thirdly, the central position of the holes in the teeth. Fourthly the choice of the thin portions of the tooth where it would be most easily perforated. Fifthly, the marks of artificial means employed in making the borings. Sixthly, they are at the very place in the tooth that would be chosen in making an instrument of defence or offence, or for an ornament in the form of a necklace. Seventhly, the fact that rude races—as the Sandwich Islanders or New Zealanders—have from time immemorial used sharks' teeth, and bored them identically with those exhibited. His reasons for supposing the perforations not to have been produced by mollusca, or boring-worms, or any parasitic animal, were—First, those creatures had invariably a purpose in making the hole for a lodgment; it was therefore evident they would not choose the thin portion of the tooth, which would be totally unadapted for the object sought. Secondly, there was no case on record of any parasite or mollusc or worm boring a fish's tooth. Thirdly, those animals had no idea that the exact centre of the tooth would be preferable to the lateral portion. Fourthly, had the holes been the result of animal borings, they would have presented a uniform appearance. As to the tooth being perforated by decay, that seemed to him the most extraordinary proposition. The appearance of a decayed tooth had no analogy whatever to the borings presented. Moreover, sharks were not subject to decayed teeth.

Mr. T. McK. HUGHES thought that there was no reason whatever for attributing the perforations of the fossils exhibited to human agency, though it might in some cases be difficult to explain exactly by what process of nature they had been produced. He pointed out that the opening at one side of the tooth was not always opposite to, or of the same size as that on the other. Some of the holes were larger inside, and irregular in form, like caves in limestone. Incipient holes occurred all over that part of the tooth not covered by enamel. Similar holes were found in bones and phosphatic nodules, not only from the crag, but from various other more ancient deposits, and notably in the phosphatic nodules of the so-called Upper Greensand. He considered them to be due chiefly to wear and decay along perforations commenced by lithodomi, boring gasteropods, or sponges, or, in some

cases, simply along the weaker or more soluble portions of the tooth, or whatever the fossil might happen to be.

Dr. CARTER BLAKE, while coinciding with most of the speakers as to the necessity of caution, failed to agree with Mr. Whitaker that the perforations in the hard osteodentine could have been produced by decay. Such action would not have produced regular and symmetrical perforations in one part of the tooth alone, and that the thickest part. Neither would a line of breakage account for the hole, as such line would be at the points of least resistance, and would have shown as a crack on the face of some of the specimens at least. Dr. Spencer Cobbold had suggested that some entozoon might have perforated these holes. He recognised Dr. Cobbold as the highest English authority on the entozoa; but was it not bold to speculate on the existence of a fossil entozoon which could perforate such a hard substance as the tooth of a shark, so much harder than the shaft of the human tibia in which the *Echinococcus* might, as Dr. Cobbold suggested, have burrowed? Dr. Collyer had spoken of a bevelled edge being visible in some of the specimens; there was certainly an erosion at the side of some of the holes, possibly produced by the erosion of a string, but a careful examination had failed to show the speaker evidence of the bevelment at the edge. He hoped that a committee would be appointed to make sections of some of the teeth, and so reconcile the apparent contradiction of fact between Mr. Charlesworth and Mr. Hughes as to the form of the internal cavity.

Mr. Flower, Colonel Fox, and the President also joined in the discussion.

Mr. CHARLESWORTH said that he hoped on an early day to bring before the Institute, in the form of a paper, his matured opinion on the facts presented that evening, with further specimens in illustration.

The papers announced for reading were postponed for want of time, Mr. Charlesworth's description, with the discussion thereon, having occupied the whole of the evening.

The meeting then separated.

APRIL 22ND, 1872.

DR. CHARNOCK, *Vice-President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

The following New Members were announced: BRINSLEY DE COURCY NIXON, Esq., Athenæum Club; HENRY GILBERT CAMMADE, Esq., Madras; the Rev. MAURICE PHILLIPS, Madras.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

FOR THE LIBRARY.

From the AUTHOR.—L'âge du Renne dans le Nord de la France, by M. E. T. Hamy.

From the AUTHOR.—The Philosophy of Science, by T. Squire Barrett.

From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris, Jan. and April, 1871.

From the EDITOR.—La Revue Scientifique, Nos. 42 and 43, 1872.

From the SOCIETY.—Proceedings of the Society of Antiquaries of London, vol. v, No. 3, 1871.

From the SOCIETY.—Journal of the Royal Asiatic Society of Great Britain and Ireland, vol. v, part 2.

From the EDITOR.—Matériaux pour l'Histoire de l'Homme, December 1871.

The following papers were read :

A few NOTES upon the HAIR, and some other PECULIARITIES of OCEANIC RACES. By J. BARNARD DAVIS, Esq., M.D., F.R.S.

THE extreme interest of oceanic races of man, many of whom present very great diversities, and are at the same time probably some of them the most isolated human beings upon the globe ; the great obstacles to their study from remoteness and inaccessibility ; the light they may be expected to throw upon many questions now agitated by writers upon monogeny and polygeny ; upon the origin of species and of civilisation, when they are fairly studied by unprejudiced observers ; and the fact that the slight remarks in the *Anthropological Review*, No. 29, April, 1870, have been deemed worthy of notice, induce me to add a few further facts, which have been communicated by a correspondent who was himself born upon an island of the Pacific, has made six voyages since 1863 round these islands, and visited a good number of them.

His first remark refers to Mr. Alfred R. Wallace's book, entitled, "The Malay Archipelago," which, he says, he read with the greatest interest upon his last voyage. He speaks in high terms of this valuable work, and exclaims, "It is, indeed, a pleasure—not so common as it ought to be—in reading a book of travel to feel that it is written by so careful an observer ; that everything he writes as matter of fact may be unreservedly believed. His account of the many tribes he met with is as graphic as it is valuable". This is important testimony from one who has wandered over the same ocean, and the highest compliment that could be paid to Mr. Wallace.

He goes on to say, "Still, I think Wallace has too limited a ground to found any theory of races upon. He feels this himself, and unfortunately enlists the observations of others, which, in this case, happen to be worse than useless, and might mislead. In vol. ii, p. 278, he writes, 'The same Papuan race seems to extend over the islands east of New Guinea as far as the Fijis'; and in the next page, 'a race identical in all its chief features with the Papuan is found in all the islands as far east as the Fijis'. In this debatable ground, where all the changes of the race might be expected to be found, Wallace's own accurate observation was needed. Beyond this", as he says, "the brown Polynesian race, or some intermediate type, is spread everywhere over the Pacific". My correspondent relates that he first visited these islands in 1863, with peculiar advantages, as he sailed in the Melanesian mission schooner, and thinks that they landed upon thirty-five of the islands. He adds, "I do not think that any one who had merely made the first cruise with us, even if he had not known a word of any of the languages, would have liked to speak of all these islanders as *a race*, or *one race*, or could have found any common feature among them to help him to identify them with any other race."

After this decisive testimony to the *diversity of the peoples of the different islands*, my correspondent goes on briefly to speak of his own observations of the natives of some of these islands. He says, "In some of the Islands of the New Hebrides group there are near approaches to the 'typical Papuan'; tall, black, curly-headed, or woolly, many of them with features quite Jewish. The Island of Apee, or Tasiko, is a good place to seek them at. At Leper's Island, and the north end of Whitsuntide, sufficient resemblance may be made out to the brown Papuan. In the Banks's group, a short, woolly-headed people are very seldom in any respect like their Papuan neighbours, yet are still less like the Malay. In the Island of Tikopia, which is one hundred and twenty miles north-east of the Banks's Islands, heavy, tall, stolid, light brown, straight-haired (Malays?) Polynesians are to be found. North of this again, at Santa Cruz, is a light-brown people, as tall as average Englishmen, with what would apparently be curly or wavy hair, if it were let alone. On St. Christoval to the west the people are short, generally black, but sometimes brown, sturdy, with every variety of feature, and hair from wool to just wavy. On Bellona Island, west of St. Christoval, are a tall, light brown, or olive people, with straight hair, like the Tikopians. At Ysabel, a little further west, the people are very short and slight, brown, with wavy hair, many of them with Mongolian features. At New Georgia one meets with a true black Papuan."

After this cursory description of the races of different islands, all tolerably near together, beginning with the Island of Apee in the New Hebrides group, my correspondent considers that he has established the position with which he set out, viz., *the wide differences that exist among the natives of these islands, even amongst those of the same group.* The differences extend to stature, and here are considerable, to colour, to hair, and to mental constitution, and the differences are strikingly observed in islands at not any remote distance from each other. It is these incontrovertible facts which, in his opinion (and I must acknowledge that their force is unquestionable), stand in the way of the classification of these various races under two or three heads. The basis of such a classification must be the existing differences; but, unless we shut our eyes to many of them, there is no possibility of comprehending the natives of many of the islands under such few heads.

Mr. Wallace regards the New Zealander, or Maori, as a form of "one great Oceanic or Polynesian race," and he would probably designate him "a brown Polynesian"; and he looks upon him as allied to the Papuan, the darker colour and more frizzly hair of the latter being the chief differences. It is apparently to this view of Mr. Wallace that my correspondent objects, when he says, "Born in New Zealand, and having lived there eighteen years, I shall not allow the correctness of Mr. Wallace's description of my countrymen. I always used to think them Malays; but let us call them Polynesians, which we find a convenient term to include all the eastern islanders—east, that is, of Fiji—and their light-coloured relations who speak dialects of the same language amongst the islands." The darker woolly-haired people we call Melaneseans, which must be a mixed race, Mr. Wallace would probably designate 'brown Polynesians'; and he looks upon them as allied to the Papuans, the darker colour and more frizzly hair being the main differences. After attacking Mr. Wallace's views, he says, "I am not prepared to set up any other theory. If we assume the New Georgian to be a pure Papuan, for he perfectly answers the description, no possible admixture of this race with the Malay is likely to produce an Ysabel native. If, however, it can and has done so, what account are we to give of the San Christoval native, or of the Banks's islander?" Both these have been before described as very different.

He gives an important testimony to the truth of the doctrine of the late Mr. Crawford, that the Malay words in all the languages of the Pacific, "from Madagascar to Easter Island, and from Formosa on the coast of China to New Zealand", are simply introduced words. The presence of these words was formerly regarded as a chief bulwark of the ethnological notion of a great

Malayo-Polynesian race. Mr. Wallace had done this before. By the way, it may be stated that this doctrine, so clearly established by Mr. Crawford, has been much and frequently controverted in different ways. Now it may be considered to be fully established. My correspondent says, "Mr. Wallace is quite right, that the presence of modern Malay words proves nothing; that is, no admixture of Malay blood, for the Malay is a great wanderer".

He concludes with some miscellaneous remarks, which show the immense difference in the taste of these islanders and in their power of executing works of art, such as in canoe building, which it may be desirable to quote: "It is worth while noticing that, in the New Hebrides and Banks's group, canoe building is as badly done as possible; a log, hardly shaped at all, pointed at both ends, roughly hollowed out, with an outrigger fastened to it by two rough sticks laid across, is the Banks's Island and the New Hebrides canoe. It carries a mat sail. A voyage of eight or ten miles on a calm day is a great exploit for these islanders. The Tikopians and Santa Cruz people build sea-going canoes, which will sail on a wind. There is constant communication between Tikopia, Santa Cruz, and Tannaco (Duff Island). A Tikopian canoe, with a crew of three, was at Sugar Loaf Island in the Banks's group two months since. They stayed a month, and then set out home, over one hundred and twenty miles of open sea. Some years since, some Santa Cruz men found their way to the Solomon Islands. They built a new canoe, and set out to go over two hundred miles against the trade wind. The Solomon islanders build beautiful canoes, and ornament them profusely; but their voyages are made within sight of land, and in calm weather. The Solomon Islander ornaments everything he can, spares no pains about it, and has an excellent eye for proportion: the Banks's islander has scarcely an idea of ornament; he has no notion of making the pretty trinkets of shell, &c., with which the Solomon Islander adorns himself." In another place, he says the Tikopian is five feet eight inches average height, and one hundred and seventy pounds average weight. An inhabitant of another island is only five feet two inches, and weighs but one hundred and thirty pounds. The San Christoval natives do not average more than five feet three inches.

The further observations of my correspondent refer to the *hair* of the Pacific islanders, which, as he affirms, is often changed in colour by lime-washing. It probably will not be inappropriate to exhibit the different specimens of hair of the Oceanic races I have been able to collect by the kind contributions of my friends.

We have first of all the fine, long, *flowing* hair of the Philip-

pine islanders, the Bisagans (Sheet I). But in these islands *crisp* hair is seen to be characteristic of the Negritos (Nos. 4, 5), which is probably disposed to grow in tufts. A similar *flowing* hair is seen among the Australians, some specimens of which are *crisp* (Sheet II). The Tasmanians, who present so many and such decided evidences of being a totally distinct race, had hair growing in short, twisted, cork-screw locks (No. 2). The hair of the Cingalese, including the aboriginal Veddahs, is seen also to be distinguished by the *flowing* character (Sheet III). And it should be remarked that all the hair yet mentioned is of a resplendent dark, or black colour. The hair of the Sandwich islanders, or Kanakas, agrees closely in its *flowing* character with the specimens hitherto mentioned (Sheet IV). But there is this remarkable peculiarity among the Kanakas, that some of them have a bright yellow, or *red* hair. These people are called in the Sandwich Islands "Elus" (No. 18). Of course, as in England, colours exist which pass gradually from the black to the red shade. And this may be said to confirm a remark made by that acute observer, Dr. Beddoe, the late President of the Society, that black and red hair are closely allied, and apt to occur in the same races. The hair of Maoris, or New Zealanders, Tahitians, Rarotongans, Samoans, and also of Marquesans, is of the same long, flowing kind, but mostly of finer texture. One of the specimens from the Samoan Islands is of a reddish colour (Sheet V, No. 17), which renders it probable that some bleaching process is employed occasionally. The hair of the Marquesan Islanders is not less coarse than that of some of the preceding races. It is well exemplified in what I take to be the woman's apron, or "Ahouaki." This also shows that the hair is often of two colours, a deep brown and a redder brown (Sheet VI). The natives of these islands use human hair for ornamental purposes, and frequently discharge its colour in their decorations. The natives of Savage Island are well known to plait hair beautifully into a string, or braid (Sheet VII, Nos. 13, 14). These braids of hair are used in the ornamentation of the beautiful pearl breast-plate exhibited. A voyager to Noukahiva, describing the costume of dancers, speaks of the bunches of white hair worn upon the wrists and ankles, and also of bunches of black hair depending below the knees. Among the specimens on the table, there are long locks of hair from the Marquesan Islands, neatly gathered into bunches by native fibres plaited round them. The hair is of two colours—a deep brown, and a reddish brown (Sheet VII). Besides these, the hair of the beard is sometimes grown with great care, and bleached white for decorations, which are considered to be of much value (No. 4). An example on the table has been very neatly prepared by enveloping each lock in a

fibre, and plaiting the whole into three bunches, which are fastened together for an ornament of a conch-shell, or as plumes for the head; it is said to be an artificial beard.

From the observations of my correspondent, it appears clearly that the natives of the different Pacific Islands vary even in islands not remotely situated from each other in an extraordinary manner. The appearances of their hair as now exhibited show an equal diversity. All the different kinds of hair, however, belong to the great class of *oval*, or *elliptical*, hairs of Dr. Peter A. Brown, according to the forms of their sections. And it is well known that the degree of the departure of the form of hairs from the cylindrical is the measure of their tendency to curl. Cylindrical hair, like that of the North American Indians, is straight or lank. The hair of Europeans, which is of oval form, has a tendency to curl, or is flowing, or inclined to fall into graceful locks. Whereas the hair which is more elliptical, or eccentrically elliptical, has a much stronger tendency to curl, which tendency is exactly measured by its degree of departure from the cylindrical form, until we reach the delicate ribbon-like hair of the Tasmanians and Mincopies, or Andaman Islanders, when the tendency to curl is irresistible, as it is equally in the fine, almost flattened, wool of the African negro—for all the arts of the negresses cannot prevent their flexuous wool from twisting. In the Pacific Islanders may be seen every degree of this flexibility. In the Bisayans of the Philippines, as has been before said, we see the same flowing locks which are the pride of Europeans. These occur also among the Kanakas, the Maoris, and the Australians. As the ellipticity increases, the hairs become crisply curly in infinite degrees. This is well exemplified in the various specimens of hair exhibited from New Caledonia, and from the different islands of the New Hebrides group (Sheet ix and x), Solomon Islands, &c.

The strong, natural curliness, or tendency to twist, is extensively availed of by the fashion which prevails in some islands of allowing the hair to grow in long, slender, twisted locks, good examples of which are seen in the specimens from Leper's Island, a small island of the New Hebridean group (Sheet x, No. 1). The lock of this twisted hair from Leper's Island is nearly twenty inches long. These locks vary in colour from a reddish brown; and some of them appear to have been bleached by art. Individuals adorned with these locks must be true Papuans, or mop-heads. But the highest degree of flatness or ellipticity is also attained by inhabitants of some islands of this group, as shown in specimens from the Island of Tanna (Sheet vii, Nos. 9, 10). The Tasmanian hair and that of the Mincopies is the same (Sheet ii, No. 2, and also Sheet xi, No. 17).

It is a common practice with those who have this kind of hair, which not unfrequently grows in separate tufts scattered over the head, with bare spots between them, to encompass each lock of hair as it grows out of the head with a flat vegetable fibre, which is wound round the lock of hair so as to separate it from its fellows (see the bunches of Papuan hair on the table). In this way the true mop-head is produced. On other occasions, instead of winding each lock separately and isolating it, they use wooden combs of two or three prongs, or even long skewers or sticks, and by these tease out the hair into a voluminous mass, so that the head would hardly go into a bushel. This is done occasionally in the Fijis.

Specimens of bleaching, or discharging, the colour of the hair abound in the hair exhibited. The practice prevails in a great many islands, and is seen among the New Caledonian hairs, those of the New Hebrides, Marquesans, &c. The colour is usually discharged by caustic lime, procured by burning sea-shells. In the extraordinarily fine specimen of the hair of a man from the Island of Santa Cruz, which is near the Solomon Islands and the New Hebrides, and to the north of Banks's Islands, may be seen particles of the shell-lime used to discharge the colour still entangled in the long flexuous locks of crisp hair, which have been prepared to be worn as ornaments (Sheet XII). Cocoa-nut fibre has been added to one of them to increase its effect, just in the same manner as the Chinese increase the volume, and especially the length, of their tails with black silk, and our own ladies by means of hair-pads.

These details respecting the diversity of the hair of the different islanders of the Pacific point out the untenableness of the late Mr. Pritchard's position, that the fashion of the hair of these islanders depended entirely upon the caprice of the owner, who could convert his straight locks by artificial teasing into the cork-screw locks of the Papuan, or Mincopie; and even in a few days, in a whim, turn them back again. The natural conformation of the hair, which lies at the base of its appearance, must always be taken into account, and this conformation will effectually preclude such transformations.

In putting these few notes together, there was a delicacy in announcing the source from which they were derived, unless a previous permission could have been obtained. A sad and melancholy occurrence, briefly announced in a telegram just received from Australia, puts this reserve on one side, for it tells of the massacre of the author, the Rev. J. Atkin, and of Bishop Patteson, on landing upon the islet of Inkepu, of the Santa Cruz group. This latter is the island from which Mr. Atkin obtained some of the most curious specimens of hair now exhibited.

The following note was read :

“ Raikote, Kattiâwâr, Bombay Presidency, Oct. 14th, 1871.

“ DEAR SIR,—I have forwarded for the Museum of the Institute, by a friend proceeding to England, the hair of a man who died last month at the Civil Hospital : it will prove, I trust, of sufficient interest to secure for it a place in our fine collection. The following are the details I have been able to gather regarding the owner of the hair.

“ Narayen Geer, aged 28 years, a native of Hindustan Proper, a fine-looking man, regular features, skin light brown. By caste he was a Brahmin, but had been induced at the age of 12 to turn fakeer, or religious mendicant. He belonged to a class of fakeers called Guzeins : they belong to different castes, and it is exceedingly rare to find among them high caste Brahmins like Narayen Geer. The castes to which most fakeers belong are the Zeree, Puree, and Barpee, and are met with all over India.

“ Narayen Geer was a great man among his people, and was held in much esteem by the gentry of this province ; he never begged, but used to accept presents from his friends sufficient to give him the simplest necessities of life. He lived for many years in a small temple dedicated to Mahaden, at a place called Babra, about forty miles from this place ; there he used to preach, or went to the neighbouring villages on missionary tours. From the day he adopted the fakeer life, he allowed the hair to grow ; the hair would represent the uninterrupted growth of sixteen years. He was very careful, and used to take much trouble to keep it clean, and every day spent a good hour brushing and cleaning it. He had never been married, and it is said he never had connection with women ; his caste people would not have allowed him to keep his long hair had he been guilty of unchastity. He remained for several months at the Civil Hospital, where he had come to be treated for an enlarged spleen ; he was always very respectful, quiet, and of a retiring disposition. He was on the point of returning to his temple, when he was suddenly seized with double pneumonia, and died a few days afterwards. At first, the Guzeins who had assembled to perform his funeral objected to my cutting off his hair ; but when it was explained that it would be sent to England, they permitted me to cut it off.

“ Believe me, yours sincerely,

“ H. BLANC, M.D., F.R.G.S., M.A.I.,

“ Surgeon H.M.I. Army, Civil Surgeon, Raikote.

“ To the Secretary of the Anthropological Institute of Great Britain and Ireland, London.”

DISCUSSION.

Mr. ILTUDEES PRICHARD said he did not pretend to have studied the subject from a scientific point of view ; but, as he thought it was very desirable that those whose lot had led them to travel in foreign countries and distant parts of the world, and who had thus enjoyed an opportunity of seeing and observing many different types of the human family, should, when they happened to be present at scientific discussions like the present, give the meeting the benefit of their experience. As regarded the question at issue, whether or not different races of the human family might be distinguished by difference in their hair, he would remark that he had the opportunity while in India of seeing at different times representatives from the races inhabiting almost all parts of the Asiatic continent. At the furthest limit of British territory on the confines of Afghanistan, in the bazaars of the city of Peshawur, you might meet with people from almost every part of Asia. In the course of his wanderings over other portions of India, he had met with representatives of almost all the tribes of India, including the descendants of the aboriginal tribes inhabiting the country before the invasion of the Aryan conquerors of Hindustan. In all these cases there was a remarkable similarity in the hair, not only in the texture and general appearance (so far as it presented itself to the eye, for he, Mr. Prichard, had not subjected it to microscopic examination), but also in colour. And he thought it not unworthy of remark that, while the colour of the hair in the European races differed so much, the colour among Asiatics appeared to be uniformly jet black. The length to which it was allowed to grow was also remarkable : some of the Indian races, the Sikhs especially, allowed their hair to grow to enormous length, often as long as the specimen on the table. He (Mr. Prichard) begged to offer these few remarks for what they were worth, not as the result of scientific research, but merely the result of observations of facts which had come before his notice.

Dr. CHARNOCK agreed with Messrs. Crawford and Wallace that the Malay words in the Oceanic dialects were introduced words. It was not difficult to understand how these words had found their way into the languages in question, if we take into account the large number of islands between the Malayan Archipelago and the Oceanic group. It was not so easy to understand how it happened that there was so great a resemblance between the languages spoken in the Marquesas, which are south of the equator, and those spoken in the Sandwich Islands, which are north of the equator, considering the great distance between the two groups and the few intervening islands. The main difference between the Mawi and Hawii, and the dialect spoken at Hiwaoa and Tahuata, consisted in the mutation of certain radical letters. It had been stated that some of the people of the Sandwich Islands who had a bright yellow or red hair, were called *Ehus*. The word *ehu* signifies red hair. [Kanaka means man ; *ka-poe-kunaka*, men.] He (Dr. Charnock) was inclined to think that neither the quality, condition, nor colour of the hair was of any value in relation to race. One of

the reasons given by Herodotus to show that the Colchi were the same people as the Egyptians was that they had woolly hair. The historian probably mistook the woolly helmets of the Colchi for woolly hair; but assuming that these people had curly hair, as one translator renders the passage, it is a fact that at the present day none of the peoples of Mingrelia have curly hair. Then as to the *colour* of the hair. The hair of the Gauls was probably yellowish, or reddish. Now, the French, the Keltic Irish, and the Highland Scotch are one and the same people; but the two former have to a great extent dark hair, whilst the latter have light hair, sometimes yellowish, sometimes red, and often black. The fact is, there is no doubt that during the last 2000 years, in most parts of Europe, the human hair has been gradually getting darker. In ancient authors the Gauls are variously stated to have had *rutilæ comæ*, and *rutilatæ comæ*. The former, of course, means red, reddish, or yellowish hair; but it has been asserted that *rutilatæ* must mean "dyed red." This is no doubt one of its meanings; but the word *rutilatæ* also signifies simply "red, reddish, or golden-coloured." Further, it is hardly probable that a whole nation would dye its hair, and if it did, it is more reasonable to suppose that it would dye from a light than from a dark colour. This remark was necessary, because it had been asserted that the ancient Kelts had dark, not light hair.

Mr. Luke Burke, Captain Bedford Pim, Dr. Richard King, and Mr. W. B. Martin, also spoke.

The following paper was read.

On the DESCENT of the ESKIMO. (An article in the "Mémoires de la Société Royale des Antiquaires du Nord"). By HENRY RINK, Director of the Danish Colonies in Greenland. Contributed by Dr. Rink.

THE author, who has travelled and resided in Greenland for twenty years, and has studied the native traditions, of which he has preserved a collection, considers the Eskimo as deserving particular attention in regard to the question how America has been originally peopled. He desires to draw the attention of ethnologists to the necessity of explaining, by means of the mysterious early history of the Eskimo, the apparently abrupt step by which these people have been changed from probably inland or river-side inhabitants into a decidedly littoral people, depending entirely on the products of the Arctic Sea; and he arrives at the conclusion that, although the question must still remain doubtful, and dependent chiefly on further investigations into the traditions of the natives occupying adjacent countries, yet, as far as can now be judged, the Eskimo appear to have been the last wave of an aboriginal American race, which has spread over the continent from more genial regions, following principally the rivers and water-courses, and continually yield-

ing to the pressure of the tribes behind them, until at last they have peopled the sea-coast.

In the higher latitudes, the contrast between sea and land, as affording the means of subsistence, would be sufficient to produce a corresponding abrupt change in the habits of the people, while further to the south the change would be more gradual. The water-courses which may have led the original inland Eskimo down to the sea-coast might probably have been the rivers draining the country between the Mackenzie and the Athna rivers (? Athabasca).

The same country also seems to afford the most probable means of explaining the uniformity observable in the development of Eskimo civilisation, which to some extent is still maintained amongst them upon the rivers and lakes in that part of America. This development must have been promoted by the necessity of co-operating for mutual defence against the inland people; but as soon as a certain stage of development was attained, and the tribes spread over the Arctic coasts towards Asia on the one side and Greenland on the other, the further improvement of the race appears to have ceased, or to have been considerably checked.

The author draws a comparison between the Eskimo and the nations adjoining them, both in Asia and America, in regard to their arts of subsistence, language, social laws, customs, traditions, and other branches of culture, particularly dwelling on their traditions, of which he has collected a great number from all the inhabited places on the east side of Davis's Straits, together with some from East Greenland and Labrador. He shows that an astonishing resemblance exists between the stories received from the most distant places, as, for instance, between those of Cape Farewell and Labrador, the inhabitants of which appear to have had no intercourse with each other for upwards of a thousand years. As the distance from Cape Farewell to Labrador, by the ordinary channels of Eskimo communication, is as far as from either of those two places to the most western limit of the Eskimo region, it may be assumed that a certain stock of traditions is more or less common to all the tribes of Eskimo. The author's studies have led him to the following conclusions: 1. That the principal stock of traditions were not invented from time to time, but originated during the same stage of their migrations, in which the nation developed itself in other branches of culture; viz., the period during which they made the great step from an inland to a coast people. The traditions invented subsequent to this are more or less composed of elements taken from the older stories, and have only had a more or less temporary existence, passing into oblivion during the

lapse of one or two centuries. 2. That the real historical events upon which some of the principal of the oldest tales are founded, consisted of wars conducted against the same hostile nations, or of journeys to the same distant countries ; and that the original tales were subsequently localised, the present narrators pretending that the events took place each in the country in which they now reside—as, for instance, in Greenland, or even in special districts of it. By this means it has come to pass that the men and animals of the original tales, which are wanting in the localities in which the several tribes have now settled, have been converted into supernatural beings, many of which are now supposed to be occupying the unknown regions in the interior of Greenland.

In accordance with these views, the author explains some of the most common traditions from Greenland as simply mythical narrations of events occurring in the far north-west corner of America, thereby pointing to the great probability of that district having been the original home of the nation, in which they first assumed the peculiarities of their present culture. The Greenlander's tales about "inland people" are compared with what is known about the present intercourse of the Eskimo with the interior of that part of America, such as instances of relationship between the people of the coast and the interior, sudden and murderous attacks of the latter, and a very remarkable story about an expedition to the interior for the purpose of getting copper knives from the inland people. Lastly, there are some tales about a country beyond the sea called Akilinek, and about the training of wild animals for sledge expeditions to this country, in order to recover a woman carried off by some inhabitants of that country. When we consider the existing intercourse between the inhabitants on both sides of Behring Straits, we find many circumstances to justify the conclusion that those traditions of the Greenland Eskimo refer to the origin of the Eskimo sledge-dog from the training of the Arctic wolf, to the first journeys upon the frozen sea, and to intercourse between the aboriginal Eskimo and the Asiatic coast.

DISCUSSION.

Dr. CHARNOCK said the author of the paper referred to the traditions of the Eskimo, to their having formerly inhabited the inland country, and to their having reached the sea-coast by means of the rivers; and he also spoke of a last wave of an American aboriginal race, but he did not seem to have arrived at any conclusion as to the origin of these people. Whether or not they have anything in common with the Southern Indians of America, he (Dr. Charnock) did not know ; it was quite clear that neither in physique, language, nor in anything else did they agree with the Indians of the North, who were, besides,

their enemies. Some writers were of opinion that in physique and in other respects they resemble the Tshuktshi, who occupy both coasts of Behring's Straits. Those of Asia are spread over a large part of the north-eastern extremity of Siberia, and are probably of Mongol origin. Many words in the Eskimo dialect agree with that spoken by the Tshuktshi. The former does not differ materially from the dialects spoken in the Aleutian Isles, the peninsula of Aliaska, the island of Kadjak, and the peninsula of Tshugashi, which two latter lie eastward of Aliaska. The Eskimo also agree in physique to some extent with the Aïnos, some of whom are hardly five feet high. The latter inhabit the Japanese island Yeso; Sahalien oula chata, otherwise Tarakaï, a large island off the coast of Mandshuria; the Asiatic coast from north of the Sahalien oula or Amur southward to the boundary line of Korea; the Kurile Isles, and the most southern extremity of Kamchatka, near Lopatka. He (Dr. Charnock) had not yet had an opportunity of comparing the dialects of the Aïnos with that of the Eskimo. One of the names which the Eskimo call themselves is *Inuit*. In the Malemute (Northern Aliaska) dialect, *inuut* is a man. Hobbs's Eskimo vocabulary gives *ang-hoot*, a man; the Greenland dialect has *angut* and *innuit*. All these would seem to resemble the word *Aïno*, which is a self-imposed name, signifying "men." Again, the appellation *Tshuktshi* is said to be derived from a word *tshekto*, signifying "people."

Captain BEDFORD PIM said: The question as to how America was originally peopled is one of very great importance, and, so far as I know, there is nothing authoritative known on the subject. The remarks of Dr. Rink, who has lived twenty years amongst the Greenland Eskimo, are no doubt a valuable contribution to this little understood subject; but I fear that the traditions of the Eskimo, even supposing you could unravel them, would throw little light on their early history. So far as I could make them out, they consisted rather of exploits, either against their enemies the neighbouring Indians, or in the chase. Their notion of a Supreme Being, a subject not depending upon tradition, is vagueness itself. They consider the earth was formed bit by bit by the raven, and yet they were the first to point to that bird as a good mark for our guns. I cannot, therefore, believe that any reliance is to be placed upon the traditions of such a people, even admitting that they have traditions. No; the origin of the Eskimo will not be discovered by such stories as they repeat in their *jourts*; the light of modern science must be brought to bear upon the subject—that inquisitive research which has rescued so much from pitchy darkness during the present century. One remark upon the subject may be worthy of notice in respect to the Eskimo being the last wave or ripple of a wave from the south. One of the earliest members of this Institute (with whom I have travelled over the greater part of the earth's surface), the late Dr. Seemann, fully indorsed this view, because, during a journey to Durango, in Mexico, he remarked in the burial places of the Aztecs that well-known labret worn by the western Eskimo lying on each side of the jaw of every

Aztec skeleton; and he inferred, I think very naturally, from this fact, that the custom had been brought from the south. I am inclined to agree with this supposition, for I have not seen labrets amongst the Kamtschadales; nor do I think such a custom exists further north among the Tschuski on the Asiatic side, who are near neighbours of the Eskimo, only separated by a forty mile strait (Behring's), which is constantly crossed on trading journeys. Captain Pim, with a view to illustrate their intelligence, then gave an account of some customs of the Eskimo, especially their mode of killing that formidable animal, the white or polar bear (*Ursus maritimus*); and concluded by expressing his belief that the Eskimo were pure American aborigines, and not of Asiatic descent; but that, of course, would be mere conjecture until such an array of facts was collected as would take the Eskimo origin out of the thick darkness in which, at present, we were only groping our way.

Dr. King and Mr. Lewis also joined in the discussion.

The following paper was read.

LE SETTE COMMUNI. By Dr. R. S. CHARNOCK, V.P., F.S.A.

THE district of Le Sette Comuni, which is situated nearly north of Vicenza, is a high tableland between the rivers Astico and Brenta. Its territorial extent is about one hundred square miles, and it consists principally of lofty mountains and cliffs, intersected with narrow and sterile vales. The names of the seven communes are Asiago, Ennengo, Gallio or Gellio, Fozza or Foga, Rozzo, Roana or Roviano, and St. Giacomo. There are also several scattered villages, which form part of Le Sette Comuni. [Among other communities which formerly constituted part of Le Tredici Comuni are Lugo, Salceto, Lusiano, and Roverete.] Le Sette Comuni may be visited either from Feltre and Valstagna; from Schio; or from Primolano; the two latter being the most desirable routes for taking in the whole of the communes.

In August 1869, I visited all the communes except St. Giacomo, which lay somewhat out of the way. My route was from Primolano to Schio. There are several theories as to the origin of these communes. According to oral tradition of two centuries, the Sette and Tredici Comuni are representatives of so-called Cimabri and Teutones, who crossed the Alps, A.U.C. 640, to escape the sword of Marius, and took refuge in the mountains. But, says Hornmayr,* quite as old and more reasonable is the tradition that they are Low Germans from the neighbourhood of Cologne, who partly fled there, and partly came there to work in the silver and copper mines for the bishops of Trent, and in

* Hornmayr, Jos. *Gesch. d. gef. Grafschaft von Tirol*, Tüb. 1806-8. Conf. "Notes and Queries", 2nd, s. vi.

the neighbourhood of Vicenza or Belluno. Again, it is said that Frederick IV of Denmark, who visited *Le Sette Comuni* in 1708, discoursed with the inhabitants in Danish, and found their idiom perfectly intelligible. This is impossible, because the language is very different from the Danish; and Mr. W. M. F. Edwards* observes, "that if they really spoke a Danish dialect, and were the descendants of the Cimbri vanquished by Marius, their affinity with the Galli, called Kymri, could scarcely subsist, unless we suppose that at the time of Marius they had changed their language." Further, none of their local names would seem to be of Keltic origin. S. Giacomo was named after a saint, and Enneco perhaps from S. Eneco, found Henneco, *i. e.*, Inigo.

Pezzo† quotes a passage from the Saalbuch (Register) of the Hochstift belonging to the second half of the twelfth century, which is not unimportant: "Omne bonum Episcopus veronensis investivit Cimbrium archipresbiterum plebis calavenæ et ejus successores in perpetuum de ecclesia Sancti Mauri in Salinis"; from which he concludes that the high priest of this hamlet of *Le Sette Comuni* had borne the name of Cimbric at so early a date. But this is no proof whatever, inasmuch as from other Veronese documents it appears that Cimbrius was the *proper name* of the bishop himself.‡ Pezzo also quotes the Lombard text of Paul Diaconus (a writer of the ninth century) to the effect that the village and valley of Cembra in Tirol (at the entrance of the Fleimserthal) owe their name and origin to the Cimbri. But, as Hormayr remarks, Paul Diaconus§ only mentions the name Cimbra among the names of the castles destroyed in 590, during the feud of Childebert with the Lombard King Autharis, while there is not a word about the Cimbri.|| "When we compare", says Hormayr, "the great similarity of their language with the remains of the language of the Alemanni, what is more probable than that they should be descendants of that large host of the latter people whom Chlodovic, A.D. 469, overcame near Cologne, and whom the East Gothic King Theodoric received with open arms in the depopulated Rætia. Great part of them may also,

* Descr. Caractères Physiologiques des Races Humaines, 1829, p. 107 et seq.

† Pezzo (Marco), *Dei Cimbri Veronesi e Vicentini*. Verona, 1763. 8vo.

‡ Hormayr.

§ Book 3, chap. xxx.

|| Pezzo makes a still more unhappy attempt to prove the Cimbric descent of the *Sette* and *Tredici Comuni*. He refers to the fact that among them are found families of the name of *Cimberle* and *Cimberlini*, and that the hatchets used for the hewing of trees are called *Cimberake*. But this does not refer to the *Cimbri* but to the *Zimmeren* (*i. e.*, the joiners), who in German Tyrol call these hatchets *zimbern*: and who also pronounce *zimmermann*, *zimbermann*.

in later times, have settled in these important narrow passes, and have the same origin as the German colonies in Rheinwald, Tenna, Avers, and Savien (in Switzerland), established by the Emperor Frederick the Red Beard, in Upper Rhætia." But the origin of the Sette Comuni has been since (in 1828) set at rest by Giovanelli, in his work, "*Dell' Origine dei Sette et Tredici Comuni e d'altre Popolazione Alemanne abitante frà l'Adige e la Brenta nel Trentino, nel Veronese, e nel Vicentino.*"* Giovanelli consulted the authors who wrote during the epoch of the decline and fall of the Roman Empire, for the purpose of finding traces of any German people who might have established themselves in these regions before the invasion of the Lombards, and he proves that these so-called Cimbri and Teutones were merely a colony that settled in Italy during the reign of Theodoric, King of the Ostrogoths, who died A.D. 526. In the writers in question, he found authentic documents attesting such establishment and its epoch.† Ennodius, in his Panegyric of Theodoric in Italy, addresses the following words to the latter: "Thou hast received the Germans within the confines of Italy, and thou hast established them without prejudice to the other Roman proprietors of the land. Thus, this people have found a king in the place of one whom it deserved to lose. It has become the guardian of the Latin empire, whose frontier it has so often ravaged: it has been fortunate in abandoning its own country, since it has thus obtained the riches of ours."‡ A letter of Theodoric, King of Italy, written by Cassiodorus, and addressed to Clovis, King of the Franks, explains the cause and the circumstances of immigration. "Your victorious hand has vanquished the German people, struck down by powerful disasters. . . . But moderate your resentment against those unfortunate remnants of the nation, for they deserve pardon, since they have sought an asylum under the protection of your relatives. Be merciful towards those who in their terror have hidden themselves in our confines. Let it suffice that their king has fallen, together with the pride of his nation."§

The whole population of the communes amounts to 25,500 ;

* Memoria del Conte Benedetto Giovanelli. Trento, 1828.

† Conf. "Notes and Queries"; s. vi.

‡ "Quid quod à te Alemanniæ generalitas intra Italiæ terminos sine detrimento Romanæ possessionis inclusa est, cui evenit habere regem, postquam meruit perdidisse. Facta est Latialis custos Imperii, semper nostrorum populatione grassata. Cui feliciter cessit fugisse patriam suam, nam sic adepta est soli nostri opulentiam." (Opera, 311, ed. 1611.)

§ "Allemannicos populos, causis fortioribus inclinatos, victrici dextrâ subdidistis, etc. Sed motus vestros in fessas reliquias temperate; quia jure gratiæ merentur evadere, quos ad parentum vestrorum defensionem respicitis confugisse. Estote illis remissi qui nostris finibus celantur exterriti, etc. Sufficiat illum regem cum gentis suæ superbiâ cecidisse." (Cassiod. Var., l. ii, 41.)

that of the capital, Asiago, numbers 4670. The soil being throughout extremely poor, the pasture in the valleys and on the sides of the mountains is, with the exception of wood, the only valuable product of the district. The people are principally employed in the breeding of cattle, which, in the winter months, they are obliged to drive to the lower country for food. At the present day, quite two-thirds of the population of the communes would seem to be neither of German origin nor of mixed origin, but are pure Italians, and speak Italian. Even the rest of the people now bear a greater resemblance to the Italians than to the Germans, and I was told that there have been many marriages between the two nations. I however noticed many people with fair hair and German features. This was more especially the case among the women. The people are very simple in their manners, and honest, but are poor, dirty, ignorant, and superstitious. I noticed no cases of goitre or cretinism. They have no peculiarity of dress.

The German portion of the communes call their language Cimbri. (Pezzo designates his vocabulary "*Vocabolario Cimbrico*".) As I have before remarked, it bears no relation whatever to the Danish. One writer says that, out of eight thousand or nine thousand words, a vast proportion are identical with the ancient Theotisc (*i. e.*, ancient German), whilst those of the remainder, not assignable to the surrounding language, resemble that of Saxony. Had the language been of Cimbric origin, many words would no doubt have been preserved, but I find very few of Keltic origin in Pezzo's vocabulary. The dialect bears great resemblance to the Oberdeutsch* of the thirteenth century, and to the language still spoken by the mountain-dwellers of the Schlier—See and Tegern—See in Bavaria. It also agrees to a great extent with the dialect of Pergine, Roncogno, Lavarone, and Abtey. It has some words from the Italian, and perhaps a few from the modern German. The grammar has some peculiarities. In verbs compounded with prepositions, the preposition is always placed after the verb; thus, *treiben vor* for *vortreiben*; and instead of the genitive the preposition *va* for *von* is always used, as *a prueda va mutter* (in German *mutterbruder*). They usually change *w* into *b*—as *bässer* for *wasser*, *bintär* for *winter*, *bolf* for *wolf*; and *b* into *p*—as *perg* for *berg*. The dialect of Verona is even nearer the Oberdeutsch Kirchsprache than that of Vicenza. Cardinal Cornaro, Bishop of Padua, partly with the view of preserving the language and of ministering to the spiritual wants of his people, many of whom did not comprehend the neighbouring Italian, in 1632 caused the celebrated catechism of Cardinal Bellarmine to be

* Hochdeutsch.

translated into the dialect of Vicenza. The title of the translation runs, "Der Kloane Catechismo von Z' Beloseland, vortraghet in z' gapracht von sibem Kameün von a viar Gesang."* I have not been able to discover any printed books in the language.

The following is the version of the Lord's Prayer of the Sette Comuni, in the district of Vicenza.

"Unsar Vatar, dear vume Himmele,
Say dorkannet eur halgar Namen;
Kerme eur Raich;
Schai was jart (ihr) welt, wia in Himmel, a sho at Erda;
Gebht us heite unsar Proat ufen allar Taghe;
Un vorghet us unsare Schulle, wia wiar vorgeben den da saint us schullek;
Un lasset us net fallen in pose Dink;
Un boutet (behütet) uns vun Sunten, un vume Teivele. A sa sais."†

The version in the dialect of the Tredici Comuni of Verona is still nearer to the German. It runs thus:

"Vatter unser, du du pist in Himmelen,
Gheheiligh say dain Nam;
Und (uns?) zua keme dain Raich;
Dain Bill geschieghe bie im Himmel, also auf Erden;
Unser taglich Proat ghib uns haut;
Und vorghib uns unsere Schiulden, als auch bier vorgheben unser Schuldighern.
Und fuere uns nicht in Versuchung;
Sonder uns erlöse von Ubel."‡

Pezzo's Vocabulary contains about seven hundred words; Hormayr's (which is rather more modern) contains about six hundred. The following list of words, with their equivalents in the dialect of Pergine and in German, will give some idea of the language of *Le Sette Comuni*.

LE SETTE COMUNI.§	PERGINE.	GERMAN.	ENGLISH.
Dorf,	dorf,	dorf,	village.
Praät (P., prodt, proat),	praät,	brod,	bread.
Perg (P., ech, pergh),	perg,	berg,	mountain.
Basser (P., bacer, wasser),	wasser,	wasser, .	water.
Staud,	staun, staud,	wald (Wachter, staude, frutex, Glos. Pez., ne- morosa, studa- gaz),	wood.
Lemple (P., lamp, lamm),	lam,	lamm,	lamb.
Meer,	meir,	meer,	lake.

* "In Seminarien von Padoba", 1842.

† Von der Italianischen Orthographie gereinigt in Büsching's Wochenbl., Th. 5, s. 319; und Björnsthoh's Briefen, Th. 2, s. 269. Conf. Adelung's Mithridates.

‡ Aus dem Deutschen Museum, 1778, B. 2, s. 134. Conf. Adelung.

§ The letter P. refers to Pezzo's work, published in 1763.

LE SETTE COMUNI.	PERGINE.	GERMAN.	ENGLISH.
Milch	mulch,	milch,	milk.
Bolf,	bolf,	wolf,	wolf.
Hand (P., hant),	hand,	hand,	hand.
Teuffl,	taiffl,	teufel,	devil.
Kint,	kin,	kind,	child.
Foëgele (P., foghel),	fagl,	vogel,	bird.
Pomelot,	unckraäs,	kreis,	circle.
Dirnä (P., dierla),	moed,	magd (Franco-Theotisc, dirne)	maid.
Bintär (P., binter).	binter,	winter,	winter.
Euchshen (P., ochs),	oersch,	ochs,	ox.
Glockä (P., klioeh),	kloeh,	glocke,	bell.
Taversmän,	landmann,	bauer,	peasant.
Raät (P., roath, roth)	raat,	roth,	red.
Euba (P., sciaff),	schaf,	schaaß,	sheep.
Gluet (P., koll),	glövet,	kohle,	coal.
First (P., kenigh),	kuntü, konu,	konig (forst, princeps),	king.
Poon (P., scinck),	poä,	bein (Franc., bein, bain, pain; Belgic, been; Eng. bone),	leg.
Reute (P., acker),	felt,	feld (reute, a rooting out),	field.
Minschig (P., bene, wenig),	bionu,	wenig,	little.
Schbain (P., sbain),	schbai,	schwein,	swine.
Schuisse (P., siz, sice),	sies,	suss,	sweet.
Knotten,	knot,	stein.	stone.
Poom (P., pome),	paän (Dutch, boom),	baum,	tree.
Naäsà (P., nase, nasen),	nosch,	nase,	nose.
Oär (P., oa),	aeu,	ei.	egg.
Liffer (P., funt)	liver,	pfund,	pound.

The meeting then separated.

ANTHROPOLOGICAL MISCELLANEA.

THE AVARES, OR EASTERN HUNS.

THE AVARES bear a name very familiar to the readers of Gibbon and of the history of Charlemagne. Byzantium and the Frankish empire of the west equally felt their arms. From the Don to the Rhine, from the Alps to the Baltic, their warriors ravaged and overran every corner of Europe. They effectually subdued the Slaves; and it was apparently under their leadership that these latter people overwhelmed Bohemia and Mecklenburg, occupying the old seats of the Marcomanni and the Vandals. They settled in Hungary and Austria, and probably gave to the language of the descendants of Theodoric's Goths those peculiarities we differentiate when we speak of High German or High Dutch, in distinction to Low German or Low Dutch. The Avares are, therefore, an important ingredient among the European races; and it is a subject of interest to the historian no less than the ethnologist to define their race-connections and to trace out their origin. The materials for such an examination are abundant, but they have not been critically used. In the following paper I shall offer a theory on the subject, which I believe to be, in a great degree, new, and which, I believe, explains much that is difficult in the ethnography of Western Asia in the sixth century.

Latham and others, who have been followed in the notes to Smith's edition of Gibbon and his "Dictionary of Ancient Geography", decide that the Avares were Turks mainly because their leader was styled khan. As if khan was not a title used by the Russians (Const, Porphy, etc.), by the Khazars, by the Mongols, and by the early Kirguises, none of whom were Turks—a title unknown to the more savage and unmixed Turks, such as the Jakuts, Barabinski, etc.—a title which is neither more nor less than the Chinese han, a dignity conferred on the greater vassals of the empire among the barbarians, and which is the surest test we have in early times that the race whose leader bore it was subordinate and subject to, or had intercourse with, China. Besides the use of the term khan, I know of no other good evidence for making the Avares Turks. Of the value of this the above facts are conclusive.

Vivien St. Martin and others have decided that the Avares, with the Khazars, Bulgars, Huns, etc., were all Ugrian or Finnish tribes, descended from a common nest at the foot of the Urals, and related

most closely to the Voguls of the present day. This view is more reasonable than the last, and much more generally held. In fact, it has been supposed that, if we exclude the Turks, we must decide in favour of the Ugrians as the parent stock of all these tribes. In a former paper on the Khazars, I have tried to show that the alternative is not confined to Turks and Ugrians, and that, as far as the Khazars are concerned at least, the overwhelming evidence goes to show they were the ancestors of the Circassians. How about the Avares? who were they?

Theophylactus Simonocatta, who wrote a history of the Emperor Maurice (A.D. 582—602), has left us more valuable materials than all the other Greek writers for the elucidation of the question. I will quote his words at length. He says that, "having conquered the Ephthalitæ, and joined their country to his own, the Turkish khan also conquered the nation of the Abari. *Those on the Ister have falsely taken this name.....* The Turks then conquered the nation Ogor, a very numerous race, well skilled in arms. It dwelt in the east, on the river Til (*i.e.*, the Itil or Volga), which the Turks call black. Its most ancient princes were called *Var and Chunni*. A portion of these fled from the main stock into Europe, and adopted the name and distinction of the Avares. The Sarselt Unnuguri and Sabiri, on the arrival of the fugitives, were seized with great fear, as they suspected them to be Avares. *The Var and Chunni, seeing this, gave themselves the name of Abares*, for the Abares among the nations of Asia are held in highest esteem. Of these pseud-Abares some were Var and some Chunni."

Menander Protector reports that the ambassadors of Dizabulus, the Turkish khan, in answer to certain questions, said that a portion of the Avares were still subject to him, and that the number of those who had fled westward was about twenty thousand. Zemarchus, the Byzantine ambassador, on his return from Asia, the same writer tells us, crossed first the Hich, then the Daich (the Jaik, or Ural), and then, after passing some marshes, came to Attila (the Atel or Itil, the Volga); thence to the *Ougouri*, who warned the Romans of an ambush the Persians had prepared for them. The leader of the Ougouroi was subject to Dizabulus. Dizabulus was succeeded by Turxanth, who jeered the Roman ambassadors for their hollow friendship, inasmuch as he said, "Ye have made treaties with our slaves the Var-chonitæ (by whom, as the original in Menander says, he meant the Avares), who were our subjects."

These extracts have been bones of contention among ethnologists, and quite a load of lore has been accumulated about them. Several facts seem to me to stand out clearly. First, the Ougouri of Menander and the Ogors of Theophylactus are the same folk, a great and warlike people living on the Volga. These, again, can be no others than the Jougrians, so celebrated in the middle ages; the Youras of the Arabs; and Yourahs and Yugri of the Russians. Yugri is probably derived from Yukh, Ostiak, wood (Lehrberg). Their present country is filled with thick woods; it lies between the river Ob and

the Ural mountains, as far as the Nadym and the Agasin, and between 56 deg. and 67 deg. North latitude. We have shown in a previous paper that they were the same as the Ougres, or Hungarians. If Avar and Ogor are convertible terms, then assuredly the Avares were typical Ugrians, and own brothers to the Voguls and the Mordvins, as the Hungarians were. But this is improbable.

In the case of the Avares we may distinguish two distinct peoples. Theophylactus tells us, of the Ogor some were Var and some Chunni; again, the ancient princes of the Ogor were called Var and Chunni; lastly, Paulus Diaconus tells us the Avares were formerly called Huns, but from the names of their princes they took that of Avares. These extracts seem to show that it was the princely caste among the Ogors—the dominant race, in fact—which alone was entitled to the name of Avares. This is confirmed in other ways. The Turkish khan does not complain of the flight of the Ogors, but of the Varchonitæ. The Ogors are found by Zemarchus, under their own chief, on the Volga; while the Varchonites, of whom Turxanth complains, had fled towards the Danube: shewing clearly there was a distinction between them. The number of fugitives was placed by the Turks at 20,000, a small fraction only, assuredly, of those Avares who were the terror of Western Europe for so long. This fact and the rest are explainable only on the hypothesis that the Var and Chunni—*i.e.*, the Avares—were only the nucleus—"the head of the spear"—of the Avarian armies, the rest being formed of precisely the same materials as the armies of the later Hungarians; namely, of Ougres. That the Avares proper were the dominant nation of Central Asia before the Turks is stated by the ambassadors of Dizabulus. That as such they dominated over the Ogors is most probable (thus the chiefs of the latter acquired the names of Var and Chunni); and that, when beaten by the Turks, a portion of the Avares should fly to the Ogors, and with the latter invade the west, is equally probable; and this I take to be the real story. And, if it be so, we ought to find corroborating testimony in the pages of the Chinese writers, and to them we must now turn.

Before doing so, I will dispose of two or three other questions. Dr. Latham throws out a suggestion that "Abaris the Scythian", mentioned by Herodotus, may have given the name to the Avares—a far-fetched notion, showing only too clearly how apt a mere name is to run away with our ethnological reasoning; that a Scyth of the sixth century B.C., should have given a name to those who, in the sixth century A.D., Priscus tells us, "were formerly called Huns, now Avares", argues a more tenacious memory in a race for their primitive name than is consistent with probability.

The curious story of Theophylactus about the real Avares and the pseud-Avares has received many explanations. I think that of the elder St. Martin, the historian of the Armenians, is the most probable. If the Avares were the dominating race of Central Asia, they must have been too well known to the inhabitants of the northern shores of the Caspian for them to mistake an entirely different

people for them. The explanation of the story, no doubt, is, that they mistook the broken fragment flying before the Turks for the main army of the old invincible race.

Let us now leave the Byzantine and examine the Chinese authorities. Here I shall depend entirely on the authority of De Guignes, who wrote a most exhaustive article on the Avars, in the twenty-eighth volume of the "Transactions" of the French Academy, some years after the completion of his great work on the Huns.

Before the supremacy of the Turks, the western writers tell us, the Avars were the dominant race in Central Asia. The same position is filled in the Chinese accounts by the Geougen, or Jouan Jouan. Theophylactus tells us the Turkish khan killed three thousand Ogors, with their khan. Exactly the same story is told of the destruction of the Geougen by the Chinese writers. The last khan of the Ogors is called Colch by Theophylactus. The Chinese, who disfigure all foreign names, call the last khan of the Geougen Gau-lo-chin. In 551 the Geougen were defeated by the Turks; and in 555 the Turkish khan put to death three thousand of them with their leader. The fugitive Avars first appeared on the frontiers of the Roman empire in the thirty-first year of Justinian—*i.e.*, in 557—coming from the very country of the Geougen; thus the time of the arrival of the Avars exactly agrees with the time of the expulsion of the Geougen.

These facts make it most probable that the race of the Avars, whose great fame had reached Europe, was neither more nor less than the Geougen of the Chinese.

The Geougen are placed by Chinese writers about the river Tula, and we are told their country extended as far as the Baschkirs. Ma-touan-li, the great Chinese historian, places them, during the dynasties of the Huns, to the north of the Yue-tchi. These notices only vaguely define the area of the Geougen. We shall not be far wrong, however, if we assign to them the country now occupied by the Great and Middle Hordes of the Khirgises and the province of Tobolsk, the area, in fact, formerly known to the Arabs as Ibir Sebir. We shall have more to say about this when we come to the Bulgarians.

The Chinese do not assist us at all in defining the race affinities of the Geougen. Some make them Tungus, others Mongols. (Remusat, "*Langues Tartares*", p. 326.). Ma-touan-li makes them descend from the Hiong-nu—that is, makes them Turks. These contradictory accounts probably only prove that the Chinese had some difficulty in assigning them to any of the well-known races of Northern Asia.

I believe I have discovered a clue which explains the difficulty, and also solves it. Vivien St. Martin and others have remarked that the name read Geougen by De Guignes is really formed by a repetition of the same character, and ought to be read Jouan Jouan, or perhaps Jén Jén. Now Strahlenberg relates that a surname in use among the Azincian Tartars was Gugui (p. 66). This seems more than a mere resemblance of name. Who were the Azincian Tartars of Strahlenberg? The question lands us in the midst of a very

quagmire of difficulties. Until the present century it was the custom to divide all the tribes living north of the Khirgises, between the Baschkirs on the one hand and the Barga Burats on the other, into either Turks or Ostiaks. Turks, such as the Barabinski, the Tartars of Tura, of the Tchoulim, etc., were very properly considered as intruders, most of them since the foundation of the Siberian Khanate of Tura by the Mongols; the rest were the *débris* of the Cancalis and the Thoukiou, who had been pushed hither by other invaders. I believe this view to be incontrovertible, and have already treated of it at length.

Having displaced the Turks, we have remaining the Ostiaks. Klaproth was the first to point out that under the name Ostiak two different races are included. First, the Ostiaks proper (the word means those living on the Ob), of the same race as the Voguls and the Permiens, and also of the original Baschkirs—typical Ugrians, clustering about the focus of the Ugrian races, namely, the Ural Mountains. These Ostiaks are an encroaching race. They are found far away from their own camping grounds, even among the tribes on the Jenissei. These wanderers have traditions of their emigration. Strahlenberg thus reports: "When I was among the Ostiaks on the Obi, I asked them, since they were known as Ostiaks to the Russians only, whence they had their vernacular name Chondichue; they answered they came formerly from the river Chonda or Conda, which flows into the Obi..... Those Ostiaks that live farther towards the east, near the city of Tomskoi, told me they came from Sauomis Sembla, which is either Finland or Lapland." Sauomis Sembla, as Latham has pointed out, is simply land of marshes, and refers to the country north and north-west of their present residence.

In the interesting essay on the Ostiaks, contained in the *Memoirs on Russia* published anonymously in 1725, it is said: "It is easy to prove, by the ancient historians, that they (the Ostiaks) lived formerly in the province of Permia Wilski, near Solkamskoy; but the old Bishop Stephen having tried to convert them, some became Christians; others, on the contrary, abandoned the country of their ancestors, and took refuge in an inhospitable climate. This is confirmed by the similarity of their language to that of the Permeki. They have disused the name of their ancestors, and call themselves Chontiseki, and call their present country Gaudimiek. As these words have no meaning in their language, it would appear that the fear of being discovered made them disown the name Permaskoi or Perms, and obliged them to change their name." Fischer, the historian of Siberia, also says the Ostiaks are emigrants, and assigns the same cause as the author of the *Mémoires* for their emigration.

Ermann (vol. ii, p. 140) gives an anecdote related to M. Stephanoi by one of the chiefs of the Ostyaks of Yeniseisk. "Once, as our horde journeyed from the setting towards the rising sun, it was found, upon their coming to the river Tas, that but four of each sex remained alive. These, too, must have died of hunger, but that one

of them was an inspired soothsayer. On a sudden wings appeared upon his shoulders ; he first raised himself into the air, then darted down into the tas, and emerged with his body hung round with fish ; henceforward his companions became fishermen."

These authorities suffice to show that the Ostiaks proper are an encroaching race ; that they have been drifting towards the east and south in quite recent times ; and that they are no long possessors of a portion of the area they now inhabit.

I said that under the name of Ostiak two very different races have been confounded. The above remarks apply to the Ostiaks proper only. Klaproth, in his elaborate review of the Siberian races, separated from them certain tribes on the Upper Yenisei, which had been confounded with them by many authors. and gave them the name Yeniseians, by which they are still known to ethnologists. They consist now of very small and disintegrated tribes rapidly being extinguished, and having few points of resemblance in their language and customs to either Turks or Ostiaks. *Sui generis*, and isolated, they have been a puzzle to ethnologists. Long before the days of Klaproth, the much neglected Strahlenberg had distinguished them, and given a vocabulary of one of their dialects, which he pointed out was different to that of any of the surrounding tribes. These surrounding tribes—Turks, Samoyedes, and Ostiaks—have all been encroaching within quite recent times. So far as we have any evidence, the Yeniseians, on the other hand, occupy their original seats, and have been rapidly diminishing in numbers and importance. Smallpox, and the struggle for existence against Russian tax-collectors and Turkish robbers, have reduced their numbers very fast. It is of them that Strahlenberg tells the pathetic story which has been frequently repeated. He says : "The Arintzian Tartars, who live under the dominion of the Russians on the river Jenesei, near the city of Crasnojarsk, told me that when the Russians had made themselves masters of West Siberia, and these Tartars saw that they brought one nation after the other under their yoke, and of consequence reasonably concluded that it would soon come to their turn likewise, they sent ambassadors to the Russians, who took with them an arrow, a black fox, and a piece of red earth, by which they meant, according to their custom, to offer the Russians the alternative of peace or war. But the latter pursuing their design, and falling unexpectedly on these people, their horde was so entirely routed and cut off, that of seven thousand men of which they then consisted, only about two hundred are now remaining. However they have yet their separate tongue." The allegory of the fox, arrow, and red earth, has been compared with reason with the similar allegory of a bird, a frog, and a mouse, sent by the Scythians to Cyrus. In another paragraph, Strahlenberg says : "I asked them (the Arrintzi) how their horde came to be so small since they had their own separate language. They answered they were called Arrintzi or Arrinei, from the word Arr or Ara, which signifies a hornet. Now, as they were in ancient times a great and mighty people, who destroyed great numbers of other nations, they

were, therefore, compared to hornets. At a certain time a vast swarm of serpents came into their country, who had heads like men, and shone like the sun itself. With these they indeed waged war, but were at length overcome by them, routed, and great numbers of them killed by those creatures; upon which those who remained were obliged to leave the country they before lived in." Whatever the value of this etymology and fable about the serpents, it no doubt contains a tradition of the ancient greatness, and gives a cause for the present decrepitude, of the race. The story has been compared with that told by Herodotus of the Neuri.

Much remains to be said about their customs, and more especially their language, on which Castren has written a most valuable work. These I shall refer to more at length when we come to consider the Bulgarians and Huns, when we shall have to revert to this area. Here it will suffice to say, that the broken fragments of this almost extinct race now "exist (I am here using Latham's words) on each side of the Yenisey from Abakansk to the parts about Mangaseia, Abakansk and Mangaseia being Samoyed localities. The Uda, the Syn, and other Yeniseian feeders, are Yeniseian occupancies. The Ket, a feeder of the Obi, is the same. The fifty-sixth parallel cuts their area, Krasnoyarsk, Jubazk, and Pumpokolsk, being the towns of their district, but by no means the towns of the Yeniseians. On the south they are bounded by the Soiot, and certain Turk tribes approaching them, and of mixed blood; on the north by the Khasovo; on the west by the Ostiaks; and on the east by the Tungusians of the Tunguska river."

The position I have tried to support, and I believe it is incontrovertible, is, that over all this area, and even over a much wider area, the Yeniseians form the original population, and have been broken to shreds by their various neighbours. Now this very area is filled with mounds and ruins of ancient structures—more so, perhaps, than any part of Asia—ruins that attest its former culture, and prove beyond all question that it was once the stage of a civilisation which has been long extinct. I will quote the descriptions of several travellers.

Strahlenberg describes the idols and other remains taken from the Ostiaks on the rivers Irtysh and Obi, when they were baptised, among which were some above a foot high, of metal very artificially cast. The Ostiaks say they inherited them from the ancient Asiatic Scythians, or Tzudi, who inhabited those countries before they came thither. There seems to be some probability in this, as they are too stupid and simple to have made such work. Their other idols are only roughly hewn pieces of wood or stone hung over with rags." Again, "Vast numbers of graves are found in Siberia and the deserts bordering it on the south. In these tombs are found all sorts of vessels, urns, wearing apparel, ornaments and trinkets, cimetars, daggers, horse-trappings, knives, all sorts of little idols, medals of gold and silver, chessmen, and golden plates, not unlike the *bractei aurei* of some others of the ancients. Likewise cloths, folded up, of the

same sort as those the corpses were dressed in. The graves of the poorer sort have likewise such things in them of copper and brass, arrows of copper and iron, stirrups, mirrors with characters upon them, earthen urns, etc." "About twenty or thirty years ago, before the Czars of Russia were acquainted with this matter, the governours of the cities of Tara, Tomskoi, Crasnoyar, Batsaniski, Isetskoe, and others, used to give leave to the inhabitants to go in voluntary caravans to these tombs in order to ransack them, on condition that of whatever they should find of gold, silver, copper, and jewels, and other things of value, the governor should have an allowance, generally of the tenths. These caravans, whenever they found anything of value, used, for the easier dividing of their booty, to knock to pieces these choice antiquities, and give to each person his share by weight." "The arms, swords, arrows, daggers, etc., which the Russians dug out of these places, were not forged, but cast of copper, especially the swords, which were shaped much like our modern bayonets and hangers." To prove the antiquity of these remains, Strahlenberg makes an apt quotation from the war between Cyrus and the Scythians. When asked by him why they did not keep their ground, they answered that there they lost nothing by giving way, but if he should come near the sepulchres of their fathers he might then chance to see whether they could fight or no.

It is unnecessary to quote from Ermann, from Pallas, and from the rest of the Siberian travellers, who enlarge on the vast quantities of large graves and other *débris* of an extinct civilisation, which crowd the country of the Jenissei and its feeders, and which form a perennial El Dorado to the present inhabitants, robbers who organise digging and plundering expeditions to these cemeteries. Our purpose is fulfilled when we have proved the existence of the remains, and identified the race to whom they belong with apparently the only possible descendants, the broken and fast disappearing Yenisscians.

De Guignes, as is well known, identified the Huns with the Hiong-Nu of the Chinese writers. He was very probably misled by the resemblance of the name. It is strange that he should not have been impressed with the much greater resemblance there is between Hun and Jouan, or Jén. We have already quoted several authorities, who tell us that the Avares were originally called Huns; we have shown reasons for identifying them with the Jouan Jouan. So that this identity of name is a fresh support to our position: but, besides this, it throws light on another question. The Jouan Jouan first appear in Chinese history in the beginning of the third century A.D. Some time after, they are found on the Jaxartes, and invading Transoxiana, where they intermarried with the Yethas. They compelled these latter to emigrate to the south of the Oxus, and during the fourth and fifth centuries extended their power as far as India. Towards the end of the fifth century, and after it had been conquered by the Jouan Jouan, Klatten is called Houm-na by the Chinese historians. The whole frontier of Persia is then described by western writers as infested by enemies, to whom a new name is given; namely, the White Huns.

Cosmus Indio Pleustes, who was in India in 525, gives the name of Hunnia to the vast territory separating India from China. (Renaud, "Relations, etc., de l'Empire Romain avec l'Asie orientale", p. 296.) Houna is the name of a tribe occurring in Indian inscriptions. *Hara-hoûna* is the name of a barbarous people in the north-west of India, mentioned in the Mahabharata. One of the dynasties mentioned in the celebrated history of Kashmir is that of the Hunk. *Khoundooz* is one of the states near Badakschan. All these facts prove what an important race the Huns must have been in the east of Persia in the fourth and fifth centuries. They also compel us to identify the Huns with the Chinese Jouan Jouan.

Thus, while Europe and the west were being flooded by one wave of Huns, Eastern Persia and the Indian border were being flooded by another. No doubt the White Huns of Priscus and others were for the most part Ephthalitæ or Yethas, and were called Huns, as the Magyars were called Turks by Constantine Porphyrogenitus; viz., because a Hunnic caste had overrun and conquered the whole country. Most of the above facts I have taken from Vivien St. Martin's admirable essay on the Ephthalitæ, or White Huns of Priscus. It is a matter of great surprise to me that the French geographer should never identify the Huns with the Jouan Jouan.

The Huns of the Byzantine authors generically included many distinct tribes which invaded Europe in successive waves. The name Avar is confined by them to the last of these waves; the name Jouan Jouan is apparently used by the Chinese in the same wide and generic sense that we use the name Hun.

Priscus, in describing the successive tribes who pushed westward, says the Avares pushed on the Saroguri, and the Saroguri the Sabiri, and other Hunnic tribes. Now Saragouri is word for word White Oghre, or White Ogor, the particle "sar" in the Ugrian tongues meaning white. White Ogor, again, is used interchangeably with White Hun. In a previous paper of this series, I have proved that the Khazars, or Akatziri, were the same race as the Ephthalitæ of the Persian frontier. We have shown that, about the fourth century, the Ephthalitæ began to be called White Huns. We are correspondingly told that the Saroguri, being driven from their country, fell upon the Acatzirian Huns, and thoroughly overcame them. This seems to me to be conclusive that the Sarogouri were the same folk as the White Huns. I believe they were the Ogors, whom Zemarchus found to be predominant on the Volga, when he returned from his embassy to Dizabulus the Turkish Khan; and who were described by Theophylactus as dominated over by a princely caste of the Var and Chunni, that is, of the Avares.

Having traced the Avares to their cradleland, we must now give a rapid sketch of their history (chiefly from De Guignes). In the third century, A.D., Northern China was subject to a race of Tatars, known in history as the To-pa or Goci (their ethnology I hope to work out on a future occasion). About the beginning of the fourth century, a fugitive from these Tartars collected a number of hordes in the desert

to whom he gave the name Geougen. About 391, their country was entirely overrun by, and made subject to, the Goei emperor. Some fugitives, under their leader Sou-lun, escaped towards the west. Here he collected a considerable nation about him, and subdued many neighbouring princes, and soon became the most powerful chieftain in Tartary. He possessed himself of the country of the Kaotche Turks about the Onon and the Selinga, where he settled, and soon became master of all the country from Corea to the river Ily. He subjected the country of Yu-pan or Yue-po (that is, the country of the Baschkirs—De Guignes), and then took the title of khacan or khan, abolishing that of tanjou, until then held by the supreme ruler of Tartary. He now made laws for his people, and introduced discipline among their troops, which he divided into different corps. His people were till his day a barbarous race, ignorant of letters and accounts; he made them imitate Chinese manners, except in regard to their writing, which consisted merely of notches cut on wood—a species of writing common to many nations of Central Asia, and, in fact, identical with the runes of the Norsemen. He fixed his capital at Kam-tcheou, at the western extremity of Chensi, a famous town and entrepôt of trade in later history. Having been beaten in battle by the Goei Tartars, Tou-lun at length died in A.D. 410. His death was followed by considerable confusion, relieved only by constant inroads upon the territory of the Goei, in which the invaders generally were badly beaten. The emperor, weary of these incursions, set out with an army of 100,000 men, and overran the whole country of the Geougen, taking many prisoners and much booty. The Kaotche Turks, at the same time taking advantage of this inroad, killed many of their old masters, and ravaged their lands. The khan died of chagrin; his son made peace with the emperor, and married a princess of the imperial house.

About 448, the inhabitants of Yue-pan—(De Guignes calls them Baschkirs; if so, they must have been the Ogors of western writers)—sent an embassy to the Goei emperor, suggesting a treaty by which the Geougen should be attacked in the east by the Chinese and in the west by themselves, and ground to pieces between the two millstones. The Goei continued to send expeditions into Tatar, and harassed severely the Geougen; the latter did the same in reply, and overran all Little Bucharra, *i. e.*, Kaschgar, Khoten, etc. The end of the fifth century saw them struggling with their various Turkish subjects, the Cancalis or Kaotche, the Ouigours, etc. It is tedious to relate the various revolutions that took place, and one can only refer to the most striking. About 516, the khan of the Geougen thoroughly defeated the Kaotche Turks, killed their king, and made a cup out of his skull. Many of the Kaotche were driven among the Getes; that is, the White Huns of Transoxiana. About 523, there occurred a grievous famine that desolated the country of the Geougen. Meanwhile the Goei became divided into two sections, the eastern and western; the Geougen allied themselves alternately with one and the other. It was about this time we first hear of

the Turks. The Geougen were tributaries of the Goei, and seem to have been related to them very much as the Kalmucks of Soongaria were to the first Mandchu emperors. In Tartary they were supreme; all the Turkish and nomade hordes of the Altai and the Steppes of the Aral were subject to them, as were also the White Huns, whom Vivien St. Martin has identified most conclusively with the Yue-tche of the Chinese writers. With the White Huns the Geougen intermarried, and no doubt received from them much of the culture they possessed, probably also some of their religious notions. Among the races tributary to the Geougen was a tribe living in the Little Altai mountains, called Thu-kiu by the Chinese and Turks by the western writers. So far as we can judge, they first gave a name to the race which is so widely known under the name of Turks. We are told this tribe was subject to the Geougen, and was employed by them in manufacturing iron, the Thu-kiu being most skillful iron forgers. About 551, the Tie-lé, another Turkish tribe, rebelled from the Geougen; the rebellion was quelled by the Thu-kiu, whose khan, in return, asked for a daughter of the khan of the Geougen in marriage. This request was indignantly refused. Upon which Tou-muen, the khan of the Thu-kiue, took up arms and defeated the Geougen. In 555, Mo-kan, who had succeeded Tou-muen, entirely defeated the Geougen, whose khan, with three thousand of his subjects, took refuge with the Chinese. These fugitives were demanded from the Chinese emperor by Mokan, who immediately put them to the sword; and, according to the Chinese accounts, the Turkish power then supplanted that of the Geougen. At this very date, and in this manner, we are told by western writers, the Turks supplanted the Avares. The great bulk of the nation, I have no doubt, retired to the rich country about the head waters of the Irtysch, etc., where an old civilisation had long existed, and where we have placed the cradle of the race. These were the Avares, whom the Turkish ambassadors to the Romans described as still subject to them. Here they continued, and no doubt formed the nucleus of the later state of the Kie-kia-se, whom we have already described as the destroyers of the power of the Hœi-tche. These Kie-kia-se were very different to the later Kirguises, and did not become Turcified, if I may use the word, till after the eighth century. Before they became Turks, I believe them to have been of the same race as the ancient Avares and the modern Arintzian Tatars.

Before the arrival of the Turks, the Avares were predominant in Central Asia. Their influence spread into the country watered by the Volga and the Don. On the decay of the Huns proper, we are told that they forced the Sabiri, a Hunnic race, upon the Saroguri, Urogi, and other tribes, who thereupon attacked the Acatziri. This was before A.D. 465 (see Priscus de Legationibus). On the attack of the Turks, a portion of the Avares sought refuge in the country of the Tangastenses and the Mucrite, called Tangast by Theophylactus (the Tangut of the Chinese writers)—a realm, he says, agitated by no intestine struggles, where they live frugal lives and are ruled by just

laws. Its inhabitants are divided into those who wear black and those who wear red vestments. These are the two celebrated sections of the Thibetan Buddhists.

Another portion of the Avares, as we gather from the relation of the Turkish ambassadors to the Romans, remained behind in their own country, and became subject to the Turks.

Besides those who remained behind, and those who took refuge in Thibet, there was another portion of the Avares, who, following the example of other defeated nomades, took the way across the Steppes and towards the Volga. This division, as the Turks told the Romans, consisted of twenty thousand men. They adopted the credit due to their former power, and, as we have already shown, were probably for this reason called pseud-Avares by Theophylactus. Menander tells us that, having wandered about indefinitely, they at length came to the Alans, and requested Sarosius, their chief, to introduce them to the Romans. Justin then commanded the Roman troops in Lazica: he sent on the request to the Emperor Justinian, who ordered them to send ambassadors. With these ambassadors went one Candich, who insolently boasted of the invincibility of the Avares, and warned the Romans that it would be the best policy to pacify them by the gift of rich presents and a fertile region to dwell in. The Emperor, grown old and decrepit, sent the embassy splendid chains of gold and silk garments. He also sent Valentinus as his legate to counsel them to make war on the enemies of the empire. Upon this the Avares fell on the "Utiguri, the Sali, a Hunnic race, and the Sabiri",—these are the names given by Menander. These are, no doubt, the same tribes whom Theophylactus calls "Sarselt, Unuguri, and Sabiri": we shall have much to say of them when we come to the Bulgarians. North of the Caucasus, the Avares seem to have created a considerable power, and to have subdued the Ogors, etc. But the Turks were coming behind, and they must haste on. Like all the nomade masters of this area, a portion of them took refuge in the Caucasus. A chief division of the Lesghs, numbering from forty thousand to fifty thousand families, is called Avar. They speak a peculiar dialect, different to the other Lesghian speech. Among them, according to Klaproth ("*Tableaux Historiques de l'Asie*"), are found many names given by the ancients to Huns and Avares. Their chief is called Avar Khan. The Geoigiens call him Khoundsagh batouni.

The main body of the Avares pressed the Romans to assign them seats on the Danube. Justinian at length promised them the country formerly held by the Heruli in the Second Pannonia; but being advised of their want of faith, detained their embassy, and otherwise irritated them. The Turks pressed on, and we are told (Theophylactus) that the Tarinach, Cotzageri, and Zabender tribes also, sprung from the Var and Chunni—that is, Hunnic tribes—were driven forward by them, and took refuge with the khan of the Avares. The latter, with a great body of nomades, now crossed the Don, and at length entered Pannonia.

The chiefs of the Antæ now sent an embassy to the Avares, with whom was Mezamir, son of Idarisius, to pray them to release some of their captives. The arrogance of Mezamir roused the anger of the Avares, who ravaged the country of the Antæ in all directions, killed their king, and compelled them to be their subjects. This conquest has been too lightly treated by historians. It forms a most important epoch in the history of the Slavic nations. Great portions of country along the Dnieper, and especially along the Baltic, west of the Vistula, had been left comparatively vacant by the emigration of the Goths, Vandals, etc., etc. Along this open marching route the Slaves pressed westward, under the leadership of the Avares.

It was at this period apparently they took possession of Bohemia, the former home of the Marcomanni. The Bohemians call themselves Czech. It is a bold conjecture; but I believe it to be justified by the facts that this name distinguished the caste of Avares who led them. I can find no etymology for the word so good as the one (which I believe to be new) identifying them with the Seklers of Hungarian history, so celebrated in the neighbouring Moravia, and who claimed not to be Hungarians, but descendants of Attila's Huns, own brothers of the Avares.

The march of the Avares was rapid: in 562 they entered Germany as far as Thuringia, and ravaged the country right of the Rhine. In 572 they defeated Sigebert, the Frankish king. Gregory of Tours accounts for their victory by their use of magic.

About this time, Baian Khan of the Avares, in concert with the Lombards, destroyed the Gepidæ, and took possession of Pannonia; the larger portion of his armies no doubt consisted of Slaves (Serbs, Chrovats, etc., etc.), and the remnants of the Huns (Cotrigurs). In 574, after defeating the Romans, he made peace with them. This peace was renewed in 578 by the Emperor Tiberius—a treaty which gave great umbrage to the Turks, who upbraided his ambassadors for making treaties with their slaves. This curious chapter in the history of public morals is told at some length by Menander Protector. The Romans fell between two stools; for, while the treacherous Avares proceeded to attack Sirmium, the exasperated Turks laid siege to the city of Chersonese.

Tiberius was weak enough to surrender Sirmium to the Avares, and to pay them a considerable largess. Maurice, who succeeded him, increased the tribute, and also complied with the insolent demand of the Khan to send any rare animal of the Emperor's collection he might fancy. We are told that the Khan chose an elephant. But nothing would satisfy their cupidity; they overran Thrace in all directions, and took many of its cities. These wars were conducted with great barbarity; everywhere ruins and devastation marked the course of the forays of the Avares. In 599 they entered Italy, where their cruelties remind us of the gloomy days of Zenghiz. In 626, they camped under the walls of Constantinople. Thus runs the history of those dark days. Ravage, plunder, and destruction are the words most frequently used by the chroniclers; and thus they continued till

the days of Charlemagne. With their head-quarters in Pannonia, commanding the armies of the Slaves as well as of the Nomades, they effectually destroyed the civilisation of Europe from the Rhine to the Volga, and from the Baltic to the Bosphorus.

Pannonia was their focus and chief camping ground, where they stored their plunder. About 630 A.D. (Bohuez, "L'Origine des Sarmates," 504), they established the so-called Rings, or encampments, of which they had nine, the largest being seven German miles in diameter. These Rings, which included towns, pastures, and woods within their circuit, were surrounded by a rampart formed of piles and stakes, twenty feet high, filled up with stones, &c. Round this was a species of glacis, and then a ditch.

It was Charlemagne who put an end to the domination of the Avars. He took their Rings by storm in 794 and 796; and we are told that the vast booty he captured lowered the value of gold in Europe, like the discovery of California did in our own day. But the Avars had for some time been demoralised by the possession of great wealth and the temptations of luxury; and the common folk among them received Charlemagne almost as a deliverer.

Their power was broken, but they were not exterminated; the remainder coalesced with the Ughry, whose invasion took place fifty years later, and whose relatives they were, and together they formed the nation of the Hungarians.

We have thus traced out the connections and the primitive history of the Avars. We have only cleared away a portion of the difficulty that surrounds them. In the next paper, which will treat of the Huns and Bulgarians, we shall criticise more in detail some of the unsettled points in their ethnology, and shall hope to throw some light on the darker corners of the history of the fifth and sixth centuries.

HENRY H. HOWORTH.

ON THE KIMMERIAN AND ATLANTIC RACES.

I MUST except to many of the Keltic etymologies suggested by Mr. Hector Maclean. To begin with "Scythian": a better derivation than that of Mr. Maclean is given by Béron, who renders *Σκυθος*, "homme vêtu en peaux, de σκυτος, peau". Kimmerii is rendered by Mr. Maclean "fit companions or peers" (*kim*, together; *er*, man). A more reasonable derivation is from *cymmer* (*cym*, with; *môr*, the sea), a junction, confluence). The Kimmerii were perhaps originally named from dwelling at the confluence of one river with another river, or of a river with the sea. The derivation of Sabinus from *sa*, good, *bin*, white, is incorrect—the name not being of Keltic origin at all. The same remark applies to such names as Araxes, Artaxata, Armenia, Caspian, Oxus. It would be useless to attempt the etymology of such names without first arriving at an earlier orthography. At all events, the Oxus. Artaxata. Araxes are not compounded of

ax, *ox* = water, found in Keltic river names. A better derivation of *Oxus* would be from the Tartar *ak-su*, "the white water". Mr. Maclean is right in stating that *Keltai* is contracted from *Galatæ*; but the name *Keltai*, or rather *Κελται*, would seem to have arisen thus. The Germans had a word *al* = "other", "foreigner", which they borrowed from *ἄλλος* (*alius*). Hence the name of the Alemanni, "other men", "men from another country". This *al*, with a prefixed gamma, became *gal*, whence *Galli*, *Walli* (the origin of Welsh). The Greeks made use of the term *Γαλαταί* for Gauls, Celts, and the people of Galatia, who were composed of Galli and Greeks. In time *Γαλαταί* became corrupted to *Κελται*, whence *Kelt*, *Celt*. Perhaps *Kelt* is a better orthography than *Celt*, because of the word *celt*, used for a stone chisel, from Latin *cellis*.

The proper derivation of *Dariorigum* is not from *deire righ*, "grove or oakwood of kings or leaders", but from Armoric *durémorig*, *vorieg*, "near the little sea." Neither can I agree that the termination in *Britanni* is from "*anni* or *ghéinn*, same as *Veneti*"; nor that the name *Brigantes* is from *brig*, valour, and *antes*; the termination being Latin, not Keltic. Baxter, who is a very good authority in Keltic philology, renders *Nouantæ* or *Noüantæ*, "advenæ, sive novi inquilini" (from *nov* and *hant*); and he derives *Trinouantes* from *tri nou ante*, which he renders "oppidi novi incolæ". He says *hant*, *hent*, or *hynt* (in *Nouantæ*), is "iter consuetum et locum ubi adsucesimus". The town of the *Simeni* (Ptol., *Σιμενοι*) was *Sitomagus* (named from the river *Sit* or *Thet*), the same with *Thetford* and *Venta*, *i. e.*, *Venta Icenorum*. The name *Simeni* seems to be corrupted from *Cenomagni* or *Icenomagni*. In the Pe'llt. Tab., the name of the town is *Sinomacus*.

The name *Gangani* is perhaps the same as *Cengi* or *Cangi*, from *cong*, ramus. Baxter compares it with *Ὀζος Ἀρῆος*, an epithet of famous warriors among the Greeks.

We are told by Mr. Maclean that the *Belgæ* were the same as the *Veneti*; and he derives the name from two Keltic vocables, which is not reasonable. The *Belgæ* were only partly Keltic. According to *Cæsar*, they were of German origin, though somewhat mixed up with the Keltic inhabitants of Gaul. *Strabo* and *Livy* call them *Volcæ*, *Cæsar* *Volgæ*, *Ausonius* *Bolgæ*, *Cicero* *Belgæ*, *Ptolemy* *Βελγαι*, and in some Greek writers the name is written *Ουολκαι*. According to *Thierry*, the *Belgæ* dwelt for a long time on the *Euxine*, where the Greeks reduced them to servitude. The traditions of Ireland speak of an emigration into that isle, of *Fir-Bolg* (who were doubtless the same people) from the embouchure of the *Rhine* in Gaul.* The Gaelic word *beatha*, which Mr. Maclean considers to be the root of *bel* in *Belgæ*, is from *βιοτη* (L., *vita*) = *βιοτος*, *βιος*; from *βιωω*, to live.

* *Armstrong* renders the name *Belgæ*, "the quiver-bearing people, so named from their being always armed with bows and arrows (*bolg saighhead*, a quiver)". I quære the A.-S. *folc*, D. and G. *volk*, Sw. *folck*, Dan. and Eng. *folk*.

Again, the Welsh *mynydd* is not the root of *mons*, but is itself derived from *mons*, *mont-is*. There is no pretence for deriving Latin and Greek from the Keltic. The name Liguria is certainly not from the Welsh *llwyg*, a turn round; *liug*, to bind. The Welsh *lli*, a stream, has, by extension and corruption, among very many other forms, assumed those of *lag*, *leg*, *lech*, *leck*, *lig* (with a suffix, *ligr*), *lug*. Hence, Lech, a river of S. Germany; Leck, a river of the Netherlands; Leck, Leach, Lugg, rivers of England. Hence also Lugdunum, ancient name both of Leyden and Lyons; Ligr, now the Loire (and, as a diminutive, Ligerula, Loiret); and Liguria.

The name *Batavia*, or rather *Betuwe*, is of Teutonic or Gothic origin, viz., from *bet auwe*, "good land or country;" in opposition to *Veluwe*, "bad land" (*vale*, falling, desertion, &c.). The probable derivation of Cantabri, or rather of Cantabria, is from *cant*, a corner, head-land. The name of the Coritani is found written in Ptolemy Κοριτανοι; and Baxter suggests a better derivation than that of Mr. Maclean. The *tan* in Aquitani, Vescitani, Carpetani, Mauretania is said to mean "land" in Gaelic, and "under" in Welsh. Would Mr. Maclean also include under this head the African names Usalitanum, Abziritānum, Ucitānus; the Etrurian Hortanum; the Bruttian Aprustāni and Argentanum; and the Hispanian Nuditānum and Turdetāni, found also Turduli? This termination *tan* has no etymological connection with the *stan* in Oriental names, as in Afghanistan, Daghistān, Laristan. This *stan* is derived from Sanskrit *sthāna*, site, place, station. Neither can I admit that the last syllable in the names Aulerci, Lemovices, Mediomatrici, is from Keltic *ci*, *ces*, from *cia*, man. It is simply a Latin termination, which is also found in Ambracia, Boruscia, Cappadocia, Cilicia, Dacia, Græcia, Lycia, Thuscia, Thracia. We are told that the Berber word *thala*, fountain, and the Gaelic *tuil*, a flood, connect the Atlanteans of Scotland and Ireland with those of Fez and Algiers. Why did not Mr. Maclean also connect this Berber word with the Darien *doulah*? Another Berber word for a fountain is *an' serah*. Is this also allied to the Keltic? There is, indeed, no pretence for saying that any of the Keltic languages are etymologically connected with the Berber, or with any of the neighbouring languages. It would be quite as reasonable to trace the English language to the Chinese, or the Cherokee.

Gray's Inn.

R. S. CHARNOCK.

NOTE ON THE HAMAH STONES.

WITH deference to the opinions which Mr. Hyde Clarke has so clearly expressed in this Journal, and in Captain Burton's work on Unexplored Syria (vol. i, pp. 349-360), I am led to offer an interpret-

ation, which, though not a novel one, will, I believe, be borne out by some of the facts. A large amount of the emblems appear to be of a decidedly phallic nature. I shall verify this by reference to the inscriptions themselves.

No. 1 inscription, second line—We here see the sacellum, \ominus the linga, $\circ|\circ$ and a winged figure representing the yoni. Third line—The linga occurs twice, the sacellum once.

No. 2, first line—The linga is here repeated, and there are two characters which may be the yoni. Second line—Here there are four definite sacelli, four or five doubtful ones, and one linga. Third line—The linga and the sacellum are both represented.

No. 3, first line—One definite sacellum, and two doubtful ones. Second line—One doubtful sacellum.

No. 4, first leaf, first line—One linga, one sacellum. First leaf, second line—One linga, one sacellum, one emblem of probably phallic import. Second leaf, first line—Two sacelli. Second leaf, second line—One linga, one sacellum.

No. 5, first line—One linga ; three certain, one doubtful sacellum : one hand with open fingers. Second line—Two lingas, three definite sacelli, one hand with closed fingers. Third line—One linga ; six definite, one doubtful sacellum ; one obscene figure. Fourth line—One linga, seven sacelli, one lotus plant. Fifth line—Three lingas, no definite sacelli.

I abstain from offering any interpretation of these facts ; but content myself with calling the attention of the Institute to them. It appears from the above that the linga occurs seventeen times and the sacellum thirty-four times.

C. CARTER BLAKE.

KIMMERIANS AND ATLANTEANS.

(To the Editor of the Journal of the Anthropological Institute.)

SIR,—In reply to a note at page 264 of your number for October, allow me to say that I have no opinions as to matters ethnological. What I intended was to state certain facts which I had observed. The following quotations may help to show the popular opinion of the dispositions which belong to personal appearance. The people who seemed most to abound in Paris amongst the Communists, and in London amongst their admirers, were little and dark. Those who were opposed to them were long and fair. An old saw has it thus :

“ Long and lazy,
Little and loud,
Fair and foolish,
Black and proud.”

Verse xxxi, page 71, Kennedy's MS., 1785, Advocate's Library, is less complimentary to the “Atlanteans,” if they be the people meant. The black heads belonged to six brothers of *Clann Chuilgeadain*,

of Wicks, who had been slain with fifteen other personages of Irish and Scandinavian races. These were silvery or golden-haired, fair, rosy, blue-eyed, curly, white-toothed people, who are greatly admired by the poet. He did not admire the others, and he sang thus, according to the manuscript, which I quote :

“Co na sia cinn air dhroch gnè,
Chi mi dhiot an taobh mu thuath ;
S gann an aghaidh chlaon an ruieg
S dubh am fuilt a Chonail chruaidh.”—(Conal, v. 31).

“What six heads of evil mood
Do I see from thee on the north side ;
Scanty foreheads, squinting eyes,
Black 's their hair, O hardy Conal !”

They were slain to avenge the slaughter of Cuchulain, by a long, fair man ; and the long, fair, lazy men got the best of the last great fights in Europe.

I am, Sir, your obedient servant,

J. F. CAMPBELL.

New Club, Edinburgh, November 1, 1871.

A MANUAL OF MEDICAL JURISPRUDENCE FOR INDIA, including the outline of a History of Crime against the Person in India. By NORMAN CHEVERS, M.D. Calcutta : 1870. 861 pp., royal 8vo.

THIS is in reality the third edition of a work which appeared, first of all, as a report upon its subject in an Indian journal, and secondly, as a reprint, by direction of the Government of India, for the purpose of being distributed to the magistrates and judges' offices, and some of the libraries of India. The work is immensely extended and enlarged, and vastly improved. Besides its jurisprudential merits, it was always regarded as a work of great anthropological value, since it throws a flood of light upon the peculiar characters, the habits, and the crimes of the various races of man included among our fellow-subjects in India. A student of the natural history of man can scarcely open a page of this large volume without having his desire for curious and exotic information concerning the human race gratified, and without learning something strange to all our notions of European races. In the inquiry which may be said to have been excited during the last few years, relating to the characteristic peculiarities of the races of India, there are few sources of information so copious and so complete as this valuable manual.

LA RACE PRUSSIENNE. Par A. DE QUATREFAGES. Paris : Hachette and Co. 1871.

THIS small work, by the distinguished author of the “Rapport sur les Progrès de l'Anthropologie en France,” first appeared as an article in the *Révue des Deux Mondes*. That its object is political, is evident

from the introductory remark: "Puisse-t-il contribuer à détruire des erreurs et des préjugés qui, après avoir fait de la France ce qu'elle est en ce moment, menacent l'Europe entière d'une nouvelle guerre de trente ans." It is only as a contribution to science, however, that the work of Professor de Quatrefages can be noticed here, and as such it possesses great interest. The idea that the Prussians proper are far from being pure Germans is not new; and there is undoubtedly much to be said in support of the opinion expressed by our author, that they are essentially Finno-Slave, the German element with a French admixture predominating only in the high classes, and in the middle-classes of certain towns. That, as M. Godron says, the Prussians are Prussians, and neither Germans nor Slaves, is no doubt true, in the same sense as the English are English, and neither German, Celtic, Danish, nor Norman. A translation of "*La Race Prussienne*" has been published by M. Engelhardt, General Secretary of the Society of Northern Antiquaries in the Danish language, and it has been more recently translated into English.

LES GRECS À TOUTES LES ÉPOQUES. PAR UN ANCIEN DIPLOMATE EN ORIENT. E. Dentu. Paris: 1870.

THIS work is one long indictment of the Greek people, who began, says the author, as pirates, and ended as brigands. At the most vaunted period of their history, Greece was in a state of anarchy and of moral degradation, while it exerted a disastrous influence over the Macedonians, the Romans, and the nations subjected to the Eastern empire. The last days of this empire, we are told, presented "the most frightful picture of infamies, of vices, and of crimes that history has ever registered." At the end of the middle ages, the Greeks had deserved chastisements far more terrible than those which they were doomed to suffer. Our author injudiciously follows Fallmerayer in affirming that soon after that epoch the Greeks gradually disappeared from Greece, their place being taken by a Slave element; although, elsewhere, he says that if the Maina is not the Roman camp Maina, it is the only country inhabited by true descendants of the ancient Greeks. The author of this work is evidently much prejudiced against the people about whom he writes, and therefore his conclusions should be well weighed before being accepted; but they appear, on the whole, to be justified by the authorities to whom he refers.

QUADRI DELLA NATURA UMANA, FESTE ED EBBREZZE. DI PAOLO MANTEGAZZA. Two vols., 8vo. Milan: 1871.

THIS curious work, which the Florentine professor of anthropology fondly calls "the Benjamin of his family," offers at once amusement to the general reader, and instruction to the man of science. The scientific portion of the work is devoted in great measure to the study of those substances which man in all countries uses as nervous stimulants, or, as the author prefers to call them, *alimenti nervosi*. Three families of these bodies are recognised—the alcoholic, the alkaloidal, and the

aromatic stimulants, each of the two first-named families being subdivided into two tribes. Each of the substances comprised under these several heads receives in turn full discussion ; its history, preparation, uses, chemical composition, and physiological effects being carefully studied. There are also some curious tables contrasting the good and evil effects of the several stimulants, a body of useful statistical information, and some valuable bibliographical notices. Professor Mantegazza's style is essentially popular, and the work is enlivened by numerous anecdotes and scraps of poetry. The student of anthropology will read with much interest the introductory chapter, which is really a reproduction of Mantegazza's opening address to his first course of lectures on anthropology delivered at Florence in 1870. In this essay, the Professor defines the science of anthropology, traces its history and antecedents, and points out the method to be pursued in its study.

ORGANIC PHILOSOPHY. Vol. III. Outlines of Biology. Body, Soul, Mind, Spirit. By HUGH DOHERTY, M.D. London: Trübner and Co. 1871.

THIS is the third of a series of five volumes, in which the author intends to develop his system of organic philosophy. Those already published treat of Epicosmology, the three kingdoms of terrestrial nature, and Ontology, eternal forces, laws, and principles. The plan pursued by Dr. Doherty in the present volume is to trace the parallels and analogies which he supposes, and no doubt rightly, to exist between psychological and physiological phenomena. We much fear, however, that the author's style will prevent many persons from judging for themselves whether or not he has been successful. It must be said for Dr. Doherty that, at least, he is *original*, in the sense of holding opinions not accepted by others. We have an instance of this in his acceptance of the ancient doctrine of the pre-existence of the human "soul." Incarnation, indeed, occupies a very important position in Dr. Doherty's biological system, as may be seen from the statement that "embryogenesis is the act of the incarnative soul, which forms its own body by associating the atoms of substance prepared in the egg, to form organic cells and fibres, tissues and organs, within the complex unit, in accordance with the progenetic type from which the egg was first derived." A system which is founded on an idea so purely hypothetical can hardly be called scientific. The following curious account of a phenomenon, recorded as having been actually observed by the author, is worth preserving. The living body of a woman at Batavia, a small village near Buffalo, in North America, was "taken possession of by an invisible spirit, which gave the features a totally different caste of general form and expression, and spoke in the voice of a man, utterly unlike that of the woman possessed, and in a language unknown to all present (with the exception of a few words known to some), the invisible spirit representing itself to have been formerly an Indian inhabitant of that part of the country."

Whether this was an actual case of "possession," or whether the phenomenon—the reality of which can hardly be doubted, seeing that several other persons also were so afflicted—is capable of another explanation, we shall not try to determine.

C. S. W.

SUR LA DÉFORMATION TOULOUSAINE DU CRÂNE. Par M. PAUL BROCA.
8vo. Paris : 1872.

THE peculiar abnormality here described has almost escaped the notice of previous authors on the artificial deformation of the skull. It was mentioned by M. Gosse, who described and figured the three pieces of the head-dress—the *serre-tête*, the *béguin*, and the *bandeau*, which, resting on the nape of the neck, depress (from above to beneath, and from the front backward) not only the bregmatic fontanel, but also the anterior third of the sagittal suture, and the greatest part of the squama of the frontal bone. From this results a peculiar cephalic conformation, which is recognisable at the first glance. M. Broca had many times occasion to observe this Toulousaine deformation amongst the sick in the hospitals; and each time before he inquired of the patients he was able to announce, without error, that they were born in the departments of Aude, or in the Haute Garonne. The autopsy of an old woman from Toulouse, aged seventy-four, indicated that the calvaria was firmly attached to the dura mater: the osseous tissue was neither rarefied nor condensed, nor thick, nor thin; it appeared entirely normal. The pia-mater and the brain did not present any lesion. The cerebral substance, with the pia-mater, weighed only 1,079 grammes; the cranial capacity was 1,198 cubic centimètres. We must call attention to M. Broca's plan for ascertaining the relations of the coronal and lambdoid sutures to the convolutions immediately subjacent to them. The occipital fissure almost always corresponds in a rather exact manner to the lambdoid suture; whilst the fissure of Rolando in the human brain is always situated well behind the coronal suture. The conclusions of Gratiolet are thus proved to be not perfectly correct.

Turning to the skull, the norma verticalis of this old woman shows an entirely unusual aspect, as the lower border of the orbit is in advance of the superciliary arches by more than one centimètre. M. Broca's figure perhaps best shows how this curious phenomenon is produced by the recession of the frontal bones.

In the town of Toulouse deformations of the skull have become at the present day rather rare amongst individuals aged less than forty years, but they are frequent in the neighbouring country; and several generations will probably pass away before this last vestige of the manners of the ancient Tectosages shall have entirely disappeared. It may be objected to some conclusions which might be derived from the too literal exaggeration of the theory of Drs. Gosse and Broca, that in many religious orders of the Roman Catholic Church the *serre-tête*, the *béguin*, and the *bandeau* are worn often from extreme in-

fancy, and although they are bound tightly and are extremely painful at first, no deformation of the skull has occurred in my experience.

C. C. B.

M. DE QUATREFAGES has in preparation a large work on "General Craniology," in which he is assisted by the energetic young secretary to Dr. Broca, Dr. Hamy. Examples will be figured from the Paris museums, and from M. de Quatrefages' private collection. The atlas will comprise a hundred quarto plates, and the text will make a thick volume of the same size. It is, of course, premature to say when this vast work will be completed.

CHINESE SEALS FOUND IN IRELAND.—"I saw in the *Phoenix* a question regarding Mr. Getty's book on Chinese seals found in Ireland. I met with the book in Shanghai about twenty years ago, and, by a little search in the shops of Shanghai, soon obtained a collection of the same seals identical with the figures in Mr. Getty's work, bearing the same inscription, and having in some cases the monkey on them, and in other cases the prized handles, as well as some with other figures not in the book. I soon found that these seals had no great antiquity, being about two hundred years old for the most ancient, while others were more modern. Having occasion to go to Dublin some years ago, I took some of the seals with me, and, in conversation with Mr. Edward Chittam, of the Royal Irish Academy, asked him about the seals, and if he could give any reason why they had been found so often in Ireland, when he gave me the following account. Some years ago, a nobleman—I think the late Duke of Northumberland—was anxious to find out the history of these seals, and asked Mr. Chittam to offer a reward of from one to three or four guineas for every seal that might be brought to him. One or two seals were sent to him, for which he paid the offered price: but he could get no history of them. At last a respectable woman brought one or two seals, and offered them for the reward, which was paid her. She then said she thought she could get others, and she was told to do so, and that she should be paid as before. After she had thus received several guineas, Mr. Chittam said, 'Now that you have been well paid, what is the story of these seals?' Her reply was that an ancestor of hers, an Irishman, was in the China trade about a century ago, and he was in the habit of bringing home a quantity of China ware for friends, to whom he said that the shopkeepers from whom he had made his purchases gave him many of the seals, to which he had taken a fancy, and that he used constantly to give them away to friends in Ireland, and that they were carried about in all directions, being curious and interesting little things. The woman said that what she had been paid for were

the remains of the large quantities formerly brought by her ancestor. Mr. Chittam said that this was the true account of the diffusion of the seals through many parts of Ireland. I was also told that the accounts given of the finding of the seals in many places of undisturbed sepulture of great antiquity are simply untrue, and will not bear investigation. Such I believe to be the story of the seals. — W. LOCKHART, M.D.”

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

MAY 6TH, 1872.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the INDIA OFFICE.—A Continuation to a Catalogue of Maps of the British Possessions in India and other parts of Asia.

From the ASSOCIATION.—Journal of the Royal Historical and Archæological Association of Ireland, No. 9, 1872.

From MESSRS. LONGMAN and Co.—Mankind, their Origin and Destiny, by M.A., of Balliol College, Oxford.

From the SOCIETY.—Proceedings of the Royal Society, No. 133.

From the SOCIETY.—Proceedings of the Society of Antiquaries of Scotland.

From Professor ECKER.—Archiv für Anthropologie, March 1872.

From the INSTITUTION.—Journal of the Royal United Service Institution, vol. xv, No. 65A, 1872.

From the EDITOR.—The Mining Magazine and Review for May 1872.

From the AUTHOR.—The Martyrdom of Man, by W. Winwood Reade.

From JAMES BURNS, Esq.—Human Nature for May 1872.

From the EDITOR.—La Revue Scientifique, Nos. 45, 46, and 47.

The following note was read :

NOTE on the PECULIARITIES of the AUSTRALIAN CRANIUM. By S.
MESSENGER BRADLEY, F.R.C.S.

I LATELY became possessed of the skulls of three South Aus-
VOL. II. L

tralian natives, through the kindness of Mr. J. Roberts, jun., of Manchester, and I have thought that a short communication on the subject might prove interesting to the Anthropological Institute of London, as the various tribes of South Australia are still so imperfectly known.

The tribe referred to in this memoir inhabits a district in South Australia situated in 35° S. lat. and 139° 30" E. long. They live upon the borders of lakes (in this case Lake Albert), but are not lake-dwellers in the same sense that the Neolithic people of the Swiss villages were. They are without a superstition of any kind, and, so far as Mr. Roberts could learn, without any idea of a future life. Their language is monosyllabic, and essentially phonetic in character, for the most part consisting of brief animal-like cries. In stature they are of the middle height, and not badly formed; the legs especially being stouter than is generally the case in Australian savages. There is no evidence of a platycnemic condition being common amongst them, though I may mention *en passant* that I have usually found that the tibiae of Australian natives do in their flatness approach this state.

They do not bury their dead, and it is owing to this circumstance that Mr. Roberts was able, though at considerable risk, to procure the heads which he brought back with him. The process of drying is performed as follows. The body of the dead person is placed in a sitting posture near the top and centre of the hut, whilst a fire is kept constantly burning beneath. The relatives and friends of the deceased assemble daily, and squat round the fire—*waking* the dead, in fact. This process occupies from two to three weeks. When the body is baked quite dry, it is stitched up in coarse canvas and deposited in the branches of some tree. The natives are very jealous of the whites entering their huts during this drying process, and when they force an entrance a screen is hastily thrown over the body to hide it from view.

The three skulls which Mr. Roberts brought over consist of the crania of two adults and a child of about a year old. There is a strongly marked family likeness in all these skulls, and the adult crania resemble each other so closely that one description will apply to both. The first point of interest is, that the skulls are all bilaterally very symmetrical. In a recent communication to the Manchester Literary and Philosophical Society ("Proceedings Manchester Literary and Philosophical Society", Nov. 1871), I showed that the skulls of civilised nations are always more or less bilaterally unsymmetrical, and that it is not fanciful to consider this want of symmetry as evidence of a higher development than is afforded by a perfectly symmetrical skull. All the

skulls are markedly dolichocephalic, the cephalic index in each being 72.3. This uniformity, again, is a feature which is only constant in savage races. Civilisation leads to a confusion and mingling of cranial types, so that in all the European, and in many of the Asian and American nations, the classification of Retzius into dolichocephalic and brachycephalic tribes is valueless. In savage races, however, this want of uniformity does not obtain, and there is no doubt that the Australian skull is both unusually symmetrical and uniformly dolichocephalic. The sutures are all present and well marked. There are no frontal sinuses. The supraciliary ridges are remarkably large, and project so as to produce a deep notch at the junction of the nasal bones with the nasal process of the frontal bone. Prichard mentions this feature in his description of the Australian skull. (*Vide* Prichard, "Researches into the Physical History of Mankind," 3rd edit., vol. i, p. 302). The malars slope outwards more than is usual. The alveolar processes of the superior maxilla slope very obliquely forwards, producing extreme prognathism; this is as much the case in the skull of the child as in the adult cranium. The mandible is very massive, the angle well marked, and rather more everted than usual, as though to give more powerful leverage to a large masseter. The teeth are quite regular, but very large and strong; the molars are perfectly flat on their fore surfaces, as though they had been ground to a plain surface by grain feeding. The palate is a full ellipse. The temporal impressions are unusually deep and the temporal ridges unusually high, which would manifestly tend to increase the force in action of the temporal muscle. In the child's skull the anterior fontanelle was very large and open. Some hair still remained upon the dried scalp, which was smooth and black.

The adult crania gave the following measurements:

	IN. LINES.	
Length.....	7	6
Breadth	5	5
Vertical radius	4	6
Fronto-nasal radius	3	7
From auditory meatus to glabella	4	0
From auditory meatus to middle of lambdoidal suture ...	4	6
Occipital radius.....	4	0

The two adult skulls so closely corresponded in every measurement that I have only given the particulars of one skull.

The following papers were read by the Director

*Upon a SCAPHOID SKULL. A LETTER from Prof. LUIGI CALORI
to Dr. BARNARD DAVIS.**

IN the first number of this *Journal*, a comprehensive notice was given of the anatomical essays of Professor Calori, which bear so intimate a relation to Anthropology. No less than four of his treatises were embraced, all exhibiting the hand of a master in the science to which he is devoted. At that time it was little thought that another would make its appearance before the notice was printed.

This "Letter" from the Professor of Anatomy at Bologna, is of the highest importance upon the subject to which it refers. The scaphoid skull described and delineated in it, is that of the boy Antonio, whose brain has been already treated upon in our author's late anatomical memoir upon "The Brain in the two Italian Brachycephalic and Dolichocephalic Types." Some account of this very valuable treatise was given in No. I. of the "*Journal of the Anthropological Institute*," p. 115, where there appeared the brief history of "Antonio," to whom this cranium appertained. Dr. Calori included his brain among those of dolichocephalous Italians, as an exemplification of the extreme development of this organ in the antero-posterior direction. The present letter refers to the skull, which was developed upon the brain.

Professor Calori designates the cranium a "scaphoid" skull, rather than *scaphocephalic*, after Von Baer, in order to avoid an appearance of repetition; and there is no doubt that the designation is more correct. Its subject was a boy of fourteen years of age. Antonio was born at Biegne, in the province of Como, of humble parents, with his head formed thus at birth. There was no difficulty in his birth. None of his relations presented any indications of scaphocephalism. He exhibited no defect in walking or speaking; was lively and healthy as he grew to the age of fourteen; had medium stature and some grace in his limbs; was always at work, continually doing something; he was domestic, amiable, disposed to good ways, of an acute understanding, of ready and prudent discourse, although his education was almost nothing; he received instruction speedily, and, moreover, undertook to do things which he had not before seen done—for instance, to descend the organ, which he sounded when it appeared to him to be out of tune, trying it again and

* "*Sopra un Cranio Scafoideo (Scaphocephalus Baerii).*" Lettera del Prof. Cav. Luigi Calori, all' Illustre Craniologo Dott. J. Bernardo Davis, Vice-Presidente della Società Anthropologica di Londra. Bologna, 1871. Quarto, con 5 Tavole.

again, to mend it, attune it, and put it into order again, without any one having shown him or taught him the method. Besides which, he was very far from being like those youths who, in the exercise of the art to which they are devoted, when corrected and recorrected, fall at length into the same error; but in his case he immediately drew the rule, so as not to err. No one set him aside on account of the deformity of his head, or because it might be regarded as retributory; thus he was received by all, and liked. One object Dr. Calori had in view in this recital was to compare the history of this scaphocephalic youth, Antonio, with that singular one of the Pomeranian weaver of Stettin, who died at the age of thirty-eight years.* This man exhibited the most exaggerated instance of scaphocephalism ever recorded, and, moreover, was known and observed by one who recounted this history almost all his life, so that there is no difficulty in comparing the one with the other. Dr. Braumüller knew the Pomeranian weaver from his childhood. From what has been stated, it clearly appears that both these scaphocephali manifested a quick understanding. They had no deficiency of mental power. Professor Calori's examination of the brain of Antonio, in his former treatise, illustrated by five beautiful plates, proved that it was large, complicated, and heavy.†

The scaphoid cranium of Antonio is rather large, asymmetrical, and not furnished with bold lines and processes, but feeble, like the skulls of children of the same age, and generally of girls. It also calls to mind in its whole some of the features in the crania of embryos, of foetuses of tender age. The weight of the skull, including the lower jaw, amounts to five hundred grammes, *i.e.*, nearly eighteen ounces.

Dr. Calori gives four excellent views of the cranium of the Biegnese Antonio, all of the size of nature—a profile or side view, a vertical view, a front view, and a back view. The *norma verticalis* exhibits an irregular ovoid, very long and narrow, with a wide anterior extremity. Neither the zygomatic arches nor the nasal bones project from the contours so as to be seen. These peculiarities distinguish this skull from that described and delineated by Von Baer,‡ whilst in these respects it agrees

* This curious history was given by Dr. Braumüller, and is recorded in the memoir "On Synostotic Crania among Aboriginal Races of Men", by Joseph Barnard Davis, M.D., Haarlem, 1865, p. 35. It contains three plates of the natural size of this unique cranium.

† "Del Cervello nei due Tipi Brachicefalo e Dolicocefalo Italiani." 1870. Folio.

‡ "Die Makrokephalen im Boden der Krym und Österreichs." 1860. 4to. Tafel iii, figs. 1, 2, 3. These small figures represent the Danish skull in the Blumenbachian Museum at Göttingen.

with the cranium of the Pomeranian weaver.* The scaphoid crania, which have been represented vertically as well as in profile, are all remarkable for the great length and narrowness of the parietal region, and for its configuration; so also is that of Antonio.

Calori measured one half of the parietal region longitudinally in the middle in the curved line; the length amounted to a hundred and fifty-four millimetres. The same curved line measured transversely in the middle was only one hundred millimetres. This gives the breadth proportionately as '65, which is a very small index, and proves the excess of the long diameter over the transverse. In a parietal of a brachycephalic, or of a dolichocephalic normal skull, this index has always been found to be greater, and has varied from '85 to '96. In the scaphoid skull the excess of length makes up for the extreme narrowness, as the area of this half of the parietal amounted to 15,400 square millimetres. In order to determine whether this is a larger or smaller area than that of a parietal of an adult normal dolichocephalic or brachycephalic skull, Dr. Calori has made measurements, and found that the area of a parietal varies from 13,440 to 15,860 squares millimetres. By adding these amounts together, and dividing the sum by two, we obtain a medium of 14,650 square millimetres. It is clear that this medium is exceeded by the area of the half of the parietal region of the scaphoid skull, and that this latter may be regarded as rather large. Therefore Dr. Calori is induced to apply to this cranium the epithet *parietal*, an epithet which seems to be applicable to all the other examples described by the authors he quotes.

In the middle line of the parietal region, corresponding to the position of the sagittal suture, there rises an angular longitudinal process, or ridge, which extends down the frontal bone, and calls to mind the vertebral keel in the embryo. This process in the posterior fourth of the suture mentioned bifurcates, as a slight ridge descends the lambdoid suture, and terminates at the upper half of the occipital lambda. In the parietal portion of this ridge there is some appearance of a suture now effaced, an appearance which has led the author to consider that the sagittal suture must have closed there at last. This suture is now open only anteriorly; the open portion is somewhat more than a fourth of its length, and its aspect is in part slightly denticulated, in part as *harmonia*, these two varieties of suture alternating; whence it is manifest that the said portion of the sagittal suture would have become less if the boy had lived. In cases, certainly not rare, of precocious synostosis of the sagittal suture,

* Op. cit., Plate x.

the author says he has often found the before-mentioned anterior portion still open.

In the middle of the parietal region, corresponding to the middle third of the longitudinal ridge, there is a slight boss, in which posteriorly the fine *foramina parietalia* are perceived. This boss is, moreover, full of vascular foramina, which run into vascular grooves, that spread in the form of rays upon the parietal planes. This disposition resembles a centre of ossification, and as such it has been regarded by Minchin and by Von Baer, who speak of it as single and common to the two halves of the region in question, so that, according to their opinion, there would be only one parietal in scaphocephalia, like a single frontal in cyclopia, whence would arise the cause of this deformation.

From the sides of the longitudinal process, or ridge, there extend two parietal planes, slightly convex, which from the first descend in the manner of a roof with two slopes. These planes, measured transversely, are a little more than two centimetres across, when they suddenly bend and descend to the temporal regions. There are no parietal bosses, and the contours of the semicircular lines are with difficulty perceived. Two similar planes to these descend at the sides of this process to above the much elevated frontal boss. The occipital region is most remarkable for its great prominence, and for the strong anterior curve of the lambdoidal angle, placed not exactly in the medium line, but slightly to the left, which angle much resembles the beak of a rapacious bird. It must not be omitted to be noted that the coronal and lambdoidal sutures are both perfectly open.

We cannot follow the learned author throughout in his acute examination of the Biegnese scaphoid skull; and in the minute and accurate description which he devotes to it. He has not been able to ascertain from testimony whether Antonio suffered the same inability as the Pomeranian weaver, in not being able to look up to heaven, or raise his countenance to behold the stars. He is inclined to regard this want of power to have arisen, not from the great prominence of his occiput, but rather to some ankylosis of the cervical vertebræ, or to some defect of muscular power. In the Biegnese cranium the prominence of the forehead raises the facial angle to 85°. It presents two supernumerary teeth, which are seen in the face view. This view and that from behind do not present in outline one arc of a circle, but an arch of an acute form, as is usual in scaphoid skulls. The latter view does not present any occipital tubercle; the occipital crest and superior semicircular lines are scarcely indicated. The front view is notable in the facial ovoid for the

nobility of the forehead, or the frontal portion of the frontal bone, notwithstanding the middle ridge in its upper half and the two planes which border it. The frontal portion being measured from the fronto-nasal suture to the centre of the coronal suture in a curved line, is one hundred and forty-two millimetres in length; and measured in the transverse curved line from one side to the other of the coronal suture on the level of the spheno-parietal suture, or the position of the anterior lateral fontanel, presents a breadth of one hundred and eighty-eight millimetres, a width which is very great.

In this part of his Letter, Professor Calori turns to the subject of the measurement of the area of the foramen magnum, and of its relation to the capacity of the skull, which is called the cerebro-spinal index. Professor Mantegazza had already, in 1870, in a memoir published in the "*Rendicanti del Reale Istituto Lombardo di Scienze e Lettere*," given an account of his own method of determining the area of the occipital foramen, which he effects by inserting in the foramen prisms of wood of known superficies, and filling up the voids with iron wires of a certain circumference.* Professor Calori prefers a different method of accomplishing the same purpose. He takes a cast of the foramen in plaster, makes an exact transverse section of this cast with a sharp instrument, and then applies it to a card or paper, which had been previously ruled with square millimetres. Lastly, with a pencil having a fine point, he draws a line upon the card, carefully running round the plaster cast. The area enclosed by this circular line is then easily read in square millimetres.

The area of the foramen magnum of this scaphoid skull, measured by Professor Calori's accurate method, amounts to nine hundred square millimetres. The capacity of the cranium itself, ascertained by filling it with sea-sand, a mode he has adopted for many years, is 1646 cubic centimetres. This shows a relation of the area to the capacity of eighteen to twenty-two. As Calori explains, he designates this relation, not the cephalo-spinal index (for the area is not the cubic capacity of the theca-vertebralis), but simply the area of the foramen; and he considers that it would agree with this proportion of eighteen to twenty-two to apply to it the epithet, "*trema occipito-craniale*." He states his reasons besides for not receiving even this relation with too much confidence, or drawing reliable conclusions from it.

Professor Calori next presents a long table of measurements derived from the Biegnese scaphoid skull, of which we shall mention only two or three. The horizontal circumference is

* "*Dell' Indice Cefalospinale nell' Uomo e nelle Scimmie Antropomorfe, e del Metodo per determinarlo.*"

554 millimetres; greatest longitudinal diameter, 208 millimetres; greatest transverse diameter, 136 millimetres; vertical diameter, 139 millimetres; cephalic index, '61. In the skull of the Pomeranian weaver the horizontal circumference is 548 millimetres; greatest width, 122 millimetres; and cephalic index, '55.

Professor Calori has met with another instance of scaphocephalism in a man of Bologna, aged fifty-four years, of whom he gives a portrait in profile (Taf. V.). This man, he says, is an exception to the rule he had previously mentioned, that those having scaphoid skulls usually die in early life. Another case, which has just come to our knowledge, through the kindness of Mr. D. B. Balding, F.R.C.S.Eng., of Royston, equally proves that a more lengthened life may occur among those who manifest this extraordinary development. It is the case of an uneducated agricultural labourer, who was recently admitted into the Royston workhouse, in Hertfordshire. His scaphocephalism is strikingly marked, for he is commonly called "boat-head" in the vicinity, and his age is between fifty and sixty years. The Bolognese scaphocephalus suffers from time to time from headaches, and was formerly subject to accessions of religious mania. He is one of fourteen children, all the others being well-formed, and without any unnatural length of head. His scaphocephalism was observed at birth. By a careful examination of his head Professor Calori was enabled to ascertain that both the coronal and lambdoidal sutures are open, whilst the sagittal is effaced; and there exists the middle ridge running along the uniparietal described in the Biegness example, the parietal bosses being equally absent.

After this very interesting narrative portion of his letter, Professor Calori turns to the speculative, or theoretical, which relates to the origin of scaphocephaly. Two opinions have been expressed upon this point; that of Minchin and Von Baer that the cause of the deformation lies in the ossification of the parietals from one single germ, which is developed in the situation of the sagittal suture, and that in reality there is but a single parietal. The other opinion derives the deformity from a previous synostosis of the parietals, or the ossification of the sagittal suture, allowing that each parietal had originally its own centre of ossification. Neither of these two views is quite satisfactory to Professor Calori. In the first, it is assumed that the two usual points of ossification corresponding to the parietal bosses are wanting, and that their defect is supplied by a central osseous point being developed in the situation of the absent suture, and performing its office by irradiating from the centre to the periphery of the region. But this is quite other than proved,

for the scaphoid skull of Antonio contradicts such a view, by the manifestation of the duplicity of the parietals in the persistence of more than the anterior fourth of the sagittal suture, and in the aspect of its posterior fourth, indicating that the suture has not long disappeared. In this cranium, as in so many other examples, the parietals are narrow, and suddenly descend from the median line of the vertex to the sides, which will bring their centres of ossification up higher, and make them approach more and more to this central line, a circumstance which gives to these centres the faculty of joining into one, whence the appearance of a single osseous germ common to the two parietals in the centre of these bones. In this position, and particularly in the place in which we see in our scaphoid skull the slight parietal boss of the vertex, there is a great vascularity perceived in many minute vessels which traverse it from the interior to the exterior, or from the exterior to the interior, and which have left there a multitude of small branches and capillary grooves, which anastomose with those that follow the osseous rays running towards the place of the obliterated suture from the two parietal centres of ossification. Which circumstances and the above-mentioned approach of these centres must demonstrate much vigorous and increased ossifying activity there, and therefore display the precocity of the synostosis. The ridge is of itself a matrix of ossification, and able to engender distinct bones, or Wormians. It might be thought that the germs of these fortuitous bones, in the defect of normal osseous germs of the parietals, would lose the quality of simple osseous islands, and becoming more and more active, and extending to the entire parietal region with their radiations, would supersede the ultimate germs mentioned. But as, in our scaphoid cranium, so large a portion of the sagittal suture is still open, ought not this suture to have been all pervious behind? "There is not, then, in my opinion," says the author, "in scaphocephalic anomalies a native singleness of parts which ought normally to have been double, but a precocious union of parts which ought to be separated. This is in accordance with the opinion of Welcker, who denies that the origin of scaphocephalism lies in a single centre of ossification for the two parietals, an opinion to which you also are inclined. The scaphoid cranium I have described here is one of the proofs of this, and the opinion is in my case already demonstrated, so as to leave no doubt in the mind of any one that the parietals in scaphocephali are developed by two osseous germs, according to the laws which govern their ossification normally. But, if the production of scaphocephalism is not from one single centre of ossification for the two parietals, much less is it from precocious synostosis of the sagittal suture;

and you have already first demonstrated this, producing twenty-seven crania of your Collection all devoid of that suture, but which nevertheless, save four of them, do not present the deformity of scaphocephalism.* Whence it is reasonably established that this deformity is not an ordinary, but a rare and exceptional effect of the precocious synostosis of the suture in question. I myself possess crania of youths synostotic in the sagittal suture, none of which are scaphocephalic; part of them are dolichocephalic, part brachycephalic; which shows that such synostosis is not a character of dolichocephaly, as it appears to be in the methodic distribution of Virchow and of Lucae† of the deformities of the skull, and is still less an occasion or cause of the same. The brachycephalic skull of a little boy of thirteen years, with a cephalic index of eighty, shows synostosis of the three posterior fourths of the sagittal suture, and on the right side of the mastoido-occipital, mastoido-parietal and parieto-occipital only in correspondence to the posterior inferior angle of the parietal, yet the cranium is neither irregular, pyriform, nor apiocephalic. You have much more truly said, that the cranial deformities named by Virchow and Lucae are not necessary and invariable consequences of this or that synostosis, to which they have assigned in each case the same deformity, and that it is not always the same synostoses which mark and occasion the same deformity. I may now add, that there may be deformity of the skull without any synostosis of the sutures.

“In my Collection, the greater number of the deformed crania are plagiocephali, in which there exists as an accompaniment and an occasion the precocious synostosis of one half of the coronal suture. But, among these plagiocephalic skulls, there is one of a girl of twelve years of age, brachycephalic, with a cephalic index of .87, an idiot from birth, which cranium presents all the sutures, and none of them shows any approach to obliteration; so that it is an instance of plagiocephaly without its presumed cause. It may be added that this skull is little and round rather than otherwise, and might serve as an example of microcephalia and of trochocephalia. A cranium of a woman of almost perfect rotundity is preserved in the Museum of Pathological Anatomy of the University of Bologna, and has all the sutures pervious, although the woman to whom it belonged could not be very young, and was demented. I possess the skull of a woman of middle age, dolichocephalic, with a cephalic index of .77, and pachycephalic, which has no synostosis of any suture; and I have seen the cranium of a leptocephalic old woman, which not only has no synostosis of any suture, but in

* “On Synostotic Crania”, p. 30.

† *Ibid.*, pp. 7, 8.

which, after maceration, the sutures were no longer sufficient to hold the bones of the vault together, there being diastases, as in the crania of little children. These facts lead me to conclude that synostoses, when they accompany deformity of the skull, are not the true causes of it, or so certainly the causes. Deformities may exist without synostoses, and may, according to this view, be occasioned partly by mechanical actions, partly by diseases, especially of the bones of the cranium and of the brain, and partly from the mode in which the brain grows and is developed. In speaking of mechanical actions, I do not mean the effects of those artifices which were and are still adopted by certain people to fashion at their pleasure the heads of newborn children, but those which sometimes take place from the influence of incommodious positions of the head of the foetus *in utero*; from compressions which the mother may exercise upon it for a long time by the pursuit of some toilsome trade; by the use of cinctures, or too tight and hard stays; by habitually carrying weights upon her head, whence the abdominal muscles contract strongly, especially when the bearer makes a false step; from the influence of parturition, whether difficult, artificial, or constrained; from the supine or lateral position of infants in swaddling-clothes excessively protracted; from the falls of babies or young children upon the head; and from other such influences operating in a similar manner, which everyone may easily imagine. No doubt these mechanical actions, or causes, are more or less adapted and influential in deforming the head of the foetus, of the newly-born, of the infant, of the child, in such a manner as they are most apt and influential in producing deformity in other parts of the body. In like manner, rickets, osteomalacia, syphilis, hydrocephalus, eruption as well general as partial of the hairy scalp, accompanied with a slight degree of phlogosis, or with hyperæmia of the tissues beneath, and especially of the pericranium, and also of the dura mater (by which hyperæmia the deposition of earthy salts is more abundant, and the sutures also may disappear), are all to be taken into account among the very efficient causes producing deformity of the skull. And as to osteomalacia, I must not omit to cite the astonishing examples of skulls deformed by it, which are collected and preserved in the Museum of Pathological Anatomy by our excellent colleague Professor Cæsar Taruffi, who will be glad to show you them, if you will favour him on another of your visits to Bologna. But, of all these causes, it appears to me that the most powerful is the mode of development and increase of the brain. It is a certain thing that the cranium takes the form of this most noble organ, which grows specially according to its longitudinal diameter, or according to the

transverse or vertical; or else it is arrested in its development and increase much before its natural term; or it is developed, whether longitudinally or transversely, more in one than in the other hemisphere; or it does not grow duly in height, and deviates more and more without conforming to its normal shape; whence there will be sometimes long crania, broad or short crania, pyramidal or sugar-loaf crania, small crania, oblique or plagiocephalous, platycephali, etc. These are not merely suppositions, but, in fact, the known births of round heads, elliptical, acuminated, flat, distorted, etc.; and some of the examples of deformity of the cranium related above, convince us of the truth of these views. It would not, probably, be wandering far from the truth to maintain that no small part of the deformity of the cranium may be produced by the mode in which the brain is developed and grows, and that on the cranium becoming deformed from such cause there might successively intervene synostoses, which often accompany the deformities; it may be because given bones find themselves in more intimate contact by their edges, it may be because in that place the brain having ceased to grow, there is a greater afflux of nutritious humours, a greater deposition of earthy salts. Similar, it appears to me, have been the proceedings which have produced the deformity of the skull in the scaphocephalic Biegnese, in the Bolognese, and in others also. Excessive congenital elongation of the brain, excessive narrowness, likewise congenital, of the same organ, chiefly superiorly, a form not low upon the whole, but strongly folded towards the arch; such suits itself to the embryo or to the fœtus in its first period; consecutive synostosis of the sagittal suture in the manner which I have above pointed out, should constitute the proceeding followed by nature in producing scaphocephaly. Which proceeding may take place whenever it may be believed to have been helped by any of the other of the above-mentioned causes, and especially the mechanical ones, as a slight and often-repeated lateral compression, upon the head of the fœtus, made by the mother. This would not be contradicted if the compression should always be estimated as a concurrent cause, being such an occasion not in and by itself available to engender scaphocephaly, as the well ascertained cases prove in which the compression exercised its power, and which have always retained as the first mover the mode or the direction of the development and increase of the brain. I insist upon this condition, which I look upon as primary and indispensable to the production of the deformity, because the cranium, soft and most pliant in the embryo and the fœtus, would not have in itself power to work or effect it, and it is subordinate to the brain. A condition which might be suggested, and in the same

way confirmed in its genetic importance, is the fact that in the smallest embryos the brain is long, narrow, and much folded, and consequently so is the cranium itself, which may be especially perceived in the posterior and superior part of its vault, somewhat like the keeling of the dorsal spine; a form which, not expanding at the proper time in a normal manner and measure, especially at the superior posterior region of the cerebral hemispheres, may thus perpetuate itself and produce scaphocephaly. I perceive clearly that this mode of its genesis will probably not appear to be well contrived; but not valuing the suppositions of one single and common centre of ossification common to the two parietals, nor that of the precocious synostosis of the sagittal suture, I have not known how to find a better."

These are mainly fresh views of the causes of scaphocephalism, which we have thought it desirable to state as nearly as may be in their author's own words. He adds that, if they be erroneous, he shall be grateful to have them corrected.

*On CERTAIN POINTS concerning the ORIGIN and RELATIONS of
the BASQUE RACE. By the Rev. W. WEBSTER.*

DURING the last two years, a phrase has cropped up in treating of English history, not, indeed, unknown before, but hardly seriously maintained—viz., "Our Iberian forefathers," meaning by Iberian a race of which the Basques are the presumed modern representatives. This phrase, I think, needs careful examination. The three chief classes of evidence for the descent of peoples are—1, Historical; 2, Philological; 3, Anthropological.

The Iberian descent of the modern English, Irish, and Welsh from the Basques is said to be through the Kelts, and through that particular section of them which has been denominated the Black Kelts. I am not aware that the least historical or other evidence has been brought forward that this division of Kelts into black and white marks a real difference of race. But the theory has been extensively adopted, and has found its latest expression in the assertion of an anonymous writer in the *Guardian* newspaper, that "the Bretons and Basques are the same people."

The problem we have to examine, then, is whether the black Kelts—whether of England, Ireland, Wales, or Brittany—are identical with, or descended from, the Basques. Some colour may be given to the theory, in the minds of those who can accept it, by the dictum of Pliny, that Aquitania was formerly called *Are-morica*—"Aquitania, *Are-morica antea dicta*." Still more support may be gained from the words of Tacitus about the Silures,

a people of South Wales ("Agricola," cap. xi) : "*Silurum colorati vultus, torti plerumque crines et posita contra Hispania, Iberos veteres trajecisse, easque sedes occupasse, fidem faciunt.*" Certainly "*torti plerumque crines*" is not true of the Basques of the present day ; and we may observe that in the geography of Tacitus, and of the Latin writers generally, the South-West Coasts of England and the North-West Coasts of Spain approached each other much more nearly than they really do.

1. Let us examine some of the earliest historical evidence. There is little doubt, from various indications, that the whole of Western Europe was in præ-historic times inhabited by tribes of Turanian race. That of these the traces had mostly disappeared before the era of history. That an exception occurs with regard to the Iberi of Spain, or whoever that people were who gave Basque (Escuara) names to the cities, rivers, mountains, in Bætica, and in that part of Spain enclosed between the Idubeda mountains and the Pyrenees. By the same topographical evidence, we find the same Escuara-speaking race occupying the northern slope of the Pyrenees as far north as the parallel of the Adour ; but we have no evidence of their advance further to the north. This Iberian population of Spain was almost cleft in two by another set of tribes, called by all ancient authors, the Kelt-Iberi. They seem to have stretched eastward from Lusitania, and to have occupied the whole of the central plateau of Spain, with the exceptions above denoted. In the north-west corner—Gallicia and the Asturias—they were mingled with more purely Keltic tribes ; and small isolated portions of Keltic tribes are said to have been found in places throughout the Peninsula.

These Kelt-Iberian tribes are said by all authors to have been a mixed race of Kelts and Iberians. The Iberians were, it seems, the older inhabitants. The Kelt-Iberians are described as differing greatly from the more purely Keltic tribes, and consequently we may infer that there was a greater and more marked difference still between the Kelts and the Iberians. Contemporaneous with these populations in Spain, we find pure Keltic (Gallic and Belgic) tribes inhabiting Gaul from the Garonne to the Rhine ; only the frontier tribes of the Belgæ seem to have already received a certain admixture of Teutonic blood. In Britain, the scanty notices give tribes analogous to those of the opposite coast of Gaul, but in a ruder state of civilisation. As soon as we have any definite accounts of them, the Iberian tribes are apparently in a higher state of civilization even than the Kelts of Gaul. Whether we follow the march of Hannibal from the Ebro to the Rhone, or of Crassus from the north into Aquitania, we arrive at the same result ; the purely Keltic tribes are more barbarous than the Kelt-Iberian, or Iberian of the South.

Now, the question meets us, from what direction did the Kelts come into Spain? What were the previous movements of the Keltic race as far as we can trace them? The earliest contemporaneous notices of the Kelts find them already established in the extreme west of Europe, and in the Spanish Peninsula (Herodotus); and as far as we can previously trace them, they seem to have traversed the centre of Europe, pressed forward by Scythic and Germanic tribes from the east and north. Thus they would enter Spain by the north, and apparently by the western end of the Pyrenees, as they spread down the northern and west coasts, and then mingled with the Iberi, and so formed the large Kelt-Iberian population of Western and Central Spain. All descriptions of the Kelt-Iberi mark them as definitely established in Spain; and so thorough a fusion of the two peoples must have been the work of a considerable lapse of time. And we ask what evidence there is that, after this settlement, any large body of them moved back on their course towards the north, or found their way to Britain? They did not go by land, for Caesar clearly establishes the identity of the Belgic tribes of Britain and their opposite neighbours, and remarks the difference between these Belgic tribes and those of Gallia proper and Aquitania. The Gauls, too, were not a people to allow any free passage to Keltiberians from Spain. (Cf. Livy, xxi, cap. 20.)

Did they, then, reach Britain by sea? This seems to us most improbable. It is true that the Basques are fine sailors, but the Kelts are not remarkable as seamen; and I should imagine that there are few coasts in the world less tempting as a starting-point for a voyage to the north than the north-western coast of Spain in the teeth of the prevailing N.W. winds. There may have been Iberian or Kelt-Iberian sailors in those early (Phœnician, or Carthaginian?) ships which traded with the *Cassiterides*. There may have even been some kind of factories on the coast, but not, I think, in sufficient numbers to influence the population. They were, I take it, like the early Greek factories in the Crimea and on the Sea of Asoph, and of no more influence on the surrounding population. We conclude from our historical review that, though undoubtedly there were Kelts in Spain and Aquitania, both pure and mingled with Iberians, there is no historical evidence that they ever migrated thence to the north or north-west, either by sea or land.

2. *Philological* evidence. Professor Huxley has stated "that the Basque language is the despair of philologists." "*Indignor quandoque bonus dormitat Homerus.*" If Professor Huxley had waded through some of the weary tomes written on the Basque language before the era of modern comparative philology,

and had afterwards looked into the more recent works of Charencey, Inchauspé, Prince Napoleon, Van Eyss, Bladé, etc., he would have declared the very opposite—viz., that one of the greatest triumphs of modern philology is to have put an end to that dark and dreary chaos, and to have introduced order and light therein. But worse; when Homer nods, his imitators often not only sleep, but dream. Just as the dictum of “our Iberian forefathers” led one too zealous follower into the assertion that Basques and Bretons are the same people; so, in a pamphlet entitled “The Basque Problem Solved,” another disciple has deduced the Keltic languages directly from the Basque, with what success may be judged by the fact that in the example on which the greatest stress is laid, the postfixed plural article “ac” is treated as a radical of the word to which it is attached. The Basque language has, indeed, great powers of assimilation. It freely takes the vocabularies of other tongues, and inserts them, like bricks, into its own structure; but always according to its own peculiar architectural laws. Thus, in the Basque vocabulary, you may find examples of the languages of almost every race with whom the Basques have come in contact—Kelts, Phœnicians, Latins, Spanish, Gascon, French, etc. This will be seen by a glance at any modern Basque vocabulary. But the language itself belongs to none of these. In structure and grammar, it differs widely from them all. It is clearly agglutinative, and belongs to the great Turanian class of languages, not to the inflexional or Aryan. This, I believe, is now acknowledged by every competent student of the Basque. Max Müller has even declared the Basque to be one of the best representatives of the Turanian type. But with which particular group of Turanian dialects it has most affinity, whether with the Uralian or Finnic, or with the North American Indian, is still a question for future philologists. The Keltic dialects are clearly Aryan. There are, then, no philological grounds for assigning to the Basques the parentage of the Kelts, black or fair.

3. Are there, then, any anthropological grounds for this assertion? The peculiar characteristics of the black Kelts are, as well as I can remember, a shorter stature than the fairer Kelts, darker hair, eyes, and complexion, a lower facial angle, and a tendency to prognathism in the jaw. Now the characteristics of the Basques are a wonderfully upright carriage, with what the French call “une taille élancée;” hair, eyes, and complexion fairer than their neighbours; a good facial angle, with a jaw decidedly *not* prognathous, sometimes with a marked opposite tendency.

It is unfortunate that nearly all the scientific observations made on the physical qualities of the Basques have been taken

on or near the coast, where the population is necessarily more mixed, and the locality is most unpropitious to the purity of the race. Thus, at St. Jean de Luz and the vicinity, the neighbourhood of the sea, the lowness of the near mountains, the admixture which has now been going on for centuries with Spaniards, French, Gascons, and lately with gipsy blood (the *Cascarrotas*), must have all tended to darken the original tint. Yet even there, M. Argelliés, out of forty-seven examples, finds twenty-five examples of brown, and twenty-two of blue, green, or grey eyes. In the interior, and especially in La Soule, we are sure the proportion would be very different. There the fairness of the population and the prevalence of light hair and eyes strike every observer. Every authority, whatever be his special theory, admits that there are fair Basques to be found among the purest types of the race at the present day. Men like Arthur Young and Sir William Napier, who have no scientific theory to support, call them a fair race, the former even comparing them to the Scotch highlanders in this respect.

But it may be answered, these Basques only appear fair by contrast; they are still dark enough to stain the fairer Keltic blood. This, too, is easily decided. The Gascon population in the Pyrenees has decidedly a large element of Keltic blood; yet they are darker than the Basques. We can observe, too, the effect on this race when it comes in contact with the Basques. Take the population of the Vallée d'Aspe as a crucial instance. The mountains there are higher than in the Pays Basque, which should render the population fairer. But in the upper part of the valley, about Urdos, we find a dark Spanish type; in the lower part, where the valley spreads out into the great southern plain, at and below Oloron, we have the ordinary Gascon or Béarnais type; but half-way down the valley, in the basin of Bédous, and especially in the villages Athas, Léas, and Osse, which are divided from the Basques merely by a mountain ridge, there we find fair complexion, eyes, and hair, quite a characteristic, and the boys and girls like those of an English village. In the same way, on approaching Mauléon from Sauveterre, we have always been struck with the blue eyes and fair hair. At Biarritz (on the confines of the Basques), great caution is necessary, as not only a great part of the population is not indigenous, but *Morisco** blood is in the veins of some of the oldest families; yet in two or three of the decidedly Biarrot families we find blue-grey eyes and light hair. These facts we

* The Dalbarades and Silhouettés are descended from Moriscos. Cf. Fr. Michel's "*Histoire des Race Maudites*". The Boulanguets, Larrodets, and Peilhos, are fair. These are large families, with their connections, comprising a good part of the Biarrot population.

have heard accounted for by explanations which appear to us wholly inadequate. *E.g.*, at Osse the fairness has been attributed to the Cagots; in La Soule, to the presence of the English garrison at Mauléon, at the time of the English domination in the twelfth and fourteen centuries. But it is most doubtful if the Cagots were really a separate race. The English garrisons remained longer in the Argelez valley at Lourdes, Beaucens, and Luz; yet the same phenomenon is not exhibited there. Besides, if the Basques were really a dark race, the very small influx of English fair blood (for these so-called English garrisons were composed mostly of Gascon subjects of England) would long ere this have been absorbed into the prevailing tint. And not only in the colour of hair and eyes do the Basques show signs of being in part, at least, a fair race. Dark hair and eyes are often conjoined with a florid complexion in the men, and with a blooming complexion of red and white in the fair sex, very different from the *mât* and even tint which marks a really dark race. This fact has often been remarked by writers on the Pyrenees—*e.g.*, by Chausenque, who brings it forward as the peculiar beauty of the Basque women: “*Le sang y est beau; les Basquaises se distinguent même de leurs voisins du Béarn, par une grande fraîcheur, des traits réguliers,*” etc. The parts of the skin usually covered show often great fairness, even when the face and hands are very sun-burnt. The observer must be on his guard against taking a merely sun-burnt complexion for a really dark one. The difference will be seen at the change of the seasons. If the Basques had been originally a dark people, whence could they have obtained their present fairness? The infusion of Cagots and English blood is manifestly inadequate to account for it. Their locality would tend to darken an originally fair people, and the tendency of the whole population of Gaul, and perhaps of Germany likewise, has been for some centuries to become darker instead of lighter, whatever cause we may assign it to. It is not the mountain home of the Basques which makes them fair, for the men of Béarn and Arriège dwell in higher mountains, yet are much darker. The comparative fairness of the Basques can, we think, belong only to the race.

These three points of history, philology, and anthropology, contain, we think, the only decisive evidence as to race; but there are certain subsidiary facts from which inferences of more or less value may be drawn.

The religion of the ancient Kelts is well marked with Druidism; and its remains of burial tumuli, menhirs, dolmen, etc., are sufficiently patent. Many of such remains are found near, but none, as far as we are aware, in the Pays Basque. On

the Landes d'Ossun, near Lourdes, the tumuli stand thick. In the Vallée d'Aspe, Keltic remains are still semi-worshipped, and Keltic names appear. But of the religion of the ancient Basques no sign remains. Some Roman altars, with barbarian epithets of Roman deities, or with Latin epithets of barbarian deities, and the remains of Roman temples, have been found in the Pays Basque, but nothing by which we can certainly trace what the Basque deities *originally* were. Chaho's descriptions, so deeply tinged with his peculiar metaphysical ideas, cannot be accepted as evidence. They are the visions of an enthusiast. The early Christian missionaries, St. Amand, and the legend of St. Leo of Bayonne, both speak of idols, but what these were we know not. But a great difference appears in the reception of Christianity. The Kelt, even in Britain, seems to have been eminently susceptible of it; but, though a Roman road runs through the heart of their country, the Basques were but lately and very gradually Christianised. They now cling with firmness to Roman Catholicism, and are a church-going and religious people, not given to excess or extravagance. Except La Madeleine (the site of a Roman temple), at Tardets, in, but on the borders of, the Pays Basque, we know of no place of pilgrimage or thaumaturgic shrine in the country, whereas in Béarn and Gascony they abound. Roncesvalles is clearly a Spanish foundation.

The Kelts, as Mommsen observes, are fond of cities. The Basques are remarkably the contrary. They delight in scattered habitations. Many of the Basque villages have nothing that can be called a street. They emigrate to South rather than to North America. The loneliness of Pampas life seems rather to attract than to repel them. "In forty-eight hours after their arrival," said the French *chargé d'affaires* to me, at Montevideo, "you will not find a Basque in the town." And in those countries, the Basque is never confounded with the Spaniard or the Frenchman. The brand of race is deeper in him than the marks of nationality. Men speak there of Basque, Spaniards and French as most distinct.

Their mental power is said by themselves to be analogous to what is indicated by the form of the skull. They are of quick, precocious intelligence, rather than of great intellectual power. They are singularly polite and courteous to strangers in the remoter districts. As compared with the Gascons, they are truthful and honest, very tenacious, and obstinate; extremely courageous in their own country and in their own quarrel; they do not flaunt their bravery, nor do they seem inordinately ambitious of military fame. Exceedingly fond of athletic games, excepting perhaps ourselves, there is no people in Europe which pursues them with such ardour. There is no village—scarcely

a hamlet of a few scattered houses—which does not possess its “*jeu de Paume* ;” and the “*jeu de Pelote*” is a splendid rival to cricket. The language easily rhymes ; and improvisation is common. Allegory and a certain manly tone are the characteristics of their poetry. The pastorales, or open-air dramas, now performed in La Soule alone, deserve much more attention than has been given them. The sexes are never mingled in these representations. The plots seem to be invariably drawn from the lives of saints (and these are acted by females alone), or from a traditional memory of the *Chansons de Gestes* ; but the manner of acting and the “*mise en scène*” is not exclusively mediæval, but often recalls classical times. The dancing chorus of Satans (the native term), which enters into every piece, is most curious.

I hardly know whether it is worth while to pursue these remarks further, though there is still much of interest to notice. Perhaps one of the strangest facts in the language is that the week apparently consists of three days only. But I must stop. The Basques are like the Kelts in one thing—their passion for gaming ; and the Highland fling may be compared with the *Saut Basque*. If the British exclamation, “*By Jingo!*” can be traced to the British Kelt, it may prove a powerful link between the two races (though some might say even that was introduced from the time of the English domination), for the Basque name of the Deity is certainly “*Jinkoa, Yunkua, yaincoa, jaincoa* ;” and if we could but make out the etymology, the “*makila*,” the loaded medlar bludgeon, wielded with effect by all Basques, may be the grandfather of the Irish “*shellala*,” with which proofs of my strict impartiality I bring these remarks to an end.

DISCUSSION.

Dr. CHARNOCK was glad some one had had the courage to attack the heresy as to “*Our Iberian Ancestors*.” There is really no evidence to support the theory, except so far as might relate (which it did not profess to do) to the Spanish element in Galway. As the authors of the paper show, the evidence is the other way. The most important fact relates to race-colour. Compared with their neighbours, the Basques are, without doubt, fair in countenance, hair, etc., and, as suggested, if they are so now, they were probably still fairer in ancient times. During the last two thousand years not only the peoples of France and Germany, but also (where possible) the inhabitants of the rest of Europe had been getting darker ; but if the Iberian theory is true, the Basques must have become fairer. Messrs. Webster suggested that some colour may have been given to the theory from Pliny’s dictum that Aquitania was formerly called *Armorica*. This might or might not be the case. In ancient times nearly the whole of Normandy, as well as Bretagne, was known under the name of *Armorica* ; and, from being bounded by the *Leq*,

Lig, Ligr, or Loire, this district is in some maps called *Lugdunensis*. The name *Armorica*, like that of *Pomorania*, means simply, "upon the sea." It is probable also that all the country between the Loire and the Pyrenees, which in ancient maps is designated *Aquitania*, may, for the like reason, have been called *Armorica* or *Aremorica*. *Aquitania* would appear to be a sort of dog-Latin term to express the same thing. It has been asserted that the Basques and Bretons are one and the same people, and that the Keltic languages are derived from the Basque. We have also been told that the Caucasus is the cradle of the human race. We might dismiss fifty modern theories of this sort with "*Cras credemus, hodie nil.*" The authors of the paper are of opinion that the whole of Western Europe (except the country occupied by the Iberi) had, in pre-historic times, been inhabited by so-called Turanian peoples; but no authority had been given for such assertion. With respect to the Basques, they may or not be Turanians. Their language is agglutinative, their skull-form dolichocephalic. According to Humboldt (*Prüfung der Untersch. d. Urbewohner Hispaniens*), the Iberi anciently occupied the whole of the Peninsula; and he asserted that Basque names are found in every part of the country. He (Dr. Charnock) did not believe there is any ground for this assertion, or that the Basques ever occupied a much more extended area than they do at the present day. There might be some doubt as to *Bœtica*. The so-called Basque names which occur there are mostly compounded of *ippo*, *ast*, and *ur*, *uri*, or *illi*. Now *ippo* (which Humboldt derives from *ιππος*) is really a Phœnician word, signifying "beautiful," as the Bœtic *Irippe*, "beautiful city". It is, in fact, the same with the Hebrew *Japho*, or *Joppa*. "*Ast*" is probably a Greek vocable; whilst *uri*, *illi* may be either from the Basque *iria*, *uria*, a city, town, or, from its root, Phœnician *ir*. But Humboldt is not content with this; he shows the migrations of the Iberi by local names in Thrace, Italy, Sicily, Corsica, and Sardinia. He (Dr. Charnock) did not believe a word of this; the names given being mostly of Greek, Latin, Phœnician, or Keltic origin. Apropos of three of these names mentioned by Humboldt or in the present paper. The appellation *Orvieto* is doubtless considered to be Basque, because of the first syllable, which resembles *uria*, a city; and *Urbium* is rendered "place of two waters," from *urá*, water. Ignoring history, it is impossible to arrive at the meaning of geographical terms. The name *Orvieto* was originally *Urbs Vetus*, whilst *Urbino* was formerly *Urbisbina*. Humboldt compares the Italian river *Astura* (*Festus Stura*) with several river names in Iberia, and he renders it rock-water (*ast-urá* for *acha-* or *aitz-aurá*). *Astura* is etymologically the same word as the classic *Ister*, the river *Oyster* (whence *Oyster-mouth*) in Wales, the two rivers *Stura* in Italy, the *Steyer*, which gives name to *Styria*, the *Styr* in Galicia and Russia, and the *Stor*, *Stör*, *Stour*, in Denmark, Germany, and England, which are all derived from the Keltic *dwr*, *dour*, = water, prefixed by a sibilant. Professor Huxley had stated that the Basque language is the despair of philologists, and if we might judge from what had been written on

the subject, it no doubt is so. Larramendi says it is the most pleasing, the most harmonious, the most perfect, the most rich, the most copious, and the most ancient of languages. According to some authors, it was the language of Paradise and of the angels, and all other languages are derived from it. Basque authors assert that it is derived from the Phœnician. Dr. Webster tells us it is one of the purest remains of the Keltic. It nevertheless contains very few words from the Phœnician, and probably not half a dozen from the Keltic languages. Another writer traces it to the ancient Mauric, but none of the words appear to bear any resemblance to the Amazirgh, or to any of the North African languages. According to Borrow, it contains a great many Tatar words, and its surface is literally strewn with Sanskrit words. There is, however, probably not a Tatar word in the vocabulary, nor a single Sanskrit word that has not found its way into it except through the Greek, Latin, and derivative languages. The difficulty of acquiring the language led to the story that the devil studied Basque for seven years, and only learnt three words. The grammar agrees to some extent with the Tatar and Finnic-Tatar, and also with some of the American languages. At least one-half of the vocabulary is derived *direct* from Greek and Latin. There are quite three thousand words from the Spanish and Arabic, and some few from the Phœnician, the Keltic, the Gothic, and other European languages. This would reduce the native words to about twelve or thirteen thousand, which are probably built up from one thousand to twelve hundred words; but whence these root words are derived it is impossible to say.

MANN, *its NAMES and their ORIGINS.* By J. M. JEFFCOTT,
High Bailiff of Castletown.

THE island of Mann has a central and isolated position in the Irish Sea, and has an area of about 145,325 acres. Many names have been given to this island. From Cæsar's account of the position of Mona, it has been inferred that Mann is the island to which he gave that name. The Mona of Tacitus is undoubtedly Anglesey, but what he wrote about it has, by Polydore Virgil, Hector Boetius, and other writers, been erroneously applied to Mann. After mentioning the passage from Ireland into Britain, Cæsar says:—"In hoc medio cursu est insula quæ appellatur Mona; complures præterea minores objectæ insulæ existimantur." ("In the middle of this voyage is an island which is called Mona; many smaller islands besides are supposed to lie there.") If Mann be the island here referred to, the description is not so applicable as it at first sight seems. Cæsar, probably, intended to describe the position of Mona, as that position would appear during a voyage from the eastern shores

of Ireland to the southern coasts of Britain. In such a voyage Anglesey would, probably, be sighted; but Mann would not, for it lies between the north of England and the north-east of Ireland, parts which were unknown to Cæsar. But he mentions the supposition that there were islands smaller than Mona in the direction in which that island lay. May not Mann have been one of such supposed islands?

Buchanan affirms that Mann has been erroneously called Mona. In reference to the Western Islands of Scotland, he says:—"Prima omnium est Mana, falso quibusdam dicta Mona." As to the opinion that Mann is the island referred to by Cæsar, Brown, in his "Dissertation about the Mona of Cæsar and Tacitus,"* observes: "What utterly destroys this opinion is that by Mona, all the rest of the ancient writers certainly mean Anglesey, and not the Isle of Man; for so do Pliny and Dion, who only make mention of the name, and no more; and that Tacitus's Mona is Anglesey is beyond all dispute. It is, therefore, probable that Julius Cæsar, who only visited the southern parts of Britain, might be mistaken in his relation, and appropriate that name to Man which belonged to Anglesey."

Tacitus does not mention Mann, and if Cæsar referred to Mann he does not mention Anglesey. I think that the island called Mona in the time of Tacitus is identical with that which had been so named in the time of Cæsar; and that, therefore, Anglesey is the island to which Cæsar really alludes.

The name Eubonia has been given to Mann by several writers. Nennius's "History of Britain" is the oldest of the works in which I have been able to find it. The island is called Eubonia or Mann by Jocelinus, of Furness, who relates that St. Patrick when returning from Britain touched at the islands of the sea, one of which, "Euboniam, id est Manniam," he converted to Christ. Eubony is another form of the same word (Capgrave, "Chronicles of England," A.D. 1392). Eubonia is a reading for Eumonia. In the annals of Wales I find "Sweyn Filius Haraldi Eumonium vastavit, A.D. 987."

In the Welsh tongue Anglesey is called Môn or Môn-fynydd, supposed to be identical with *môn*=isolated. The name Mona, however, appears to denote a mountainous heathy or peaty expanse. The word exists in different forms in the Erse and Britannie tongues, *e.g.* :—

Scottish and Irish.....	<i>mòin-e, mon-adh.</i>
Manx	<i>moain-ee, moan-ey, mon-a.</i>
Welsh	<i>mawn, myn-ydh.</i>
Cornish	<i>men-edh, mon-edh.</i>
Armoric	<i>men-ez.</i>

* Appended to Sacheverell's "Account of the Isle of Man".

The name is occasionally, in the Manx dialect, applied to a farm; thus, *Moaney moar*=Big moaney or mona; *Moaney mucleigh*=Hedgehog moaney or mona.

Eumonia, though seemingly a Grecism, is, probably, a combination of the definite article *yn* and the noun *moaney*, i.e., *yn moaney*. According to Dr. Kelly, "the names of places generally require the article to be prefixed, as *yn Spaineey*, *yn Rank*, Spain and France" ("Manx and English Dictionary"). If the name Mona has been erroneously applied to Mann, so have been its cognates Eubonia, Eubony, and Eumonia.

The Manx name of the island is Mannin; hence Mann. Different origins have been ascribed to the name Mann or Mannin. Bishop Wilson derives it "from the Saxon word 'mang,' among, as lying almost at an equal distance between the kingdoms of England, Scotland, Ireland, and Wales,"—a derivation exceedingly improbable. McPherson supposed Mannin to have originated in *mean*=middle and *in*=island—middle island; but Dr. Kelly is of opinion that the "patronymic *Manninagh* seems to destroy McPherson's etymology. According to him the name of a Manx man would be *Meanagh*, which would be either the middle man or the monkish man (as *Balley-meanagh* is abbots land), but this is answered by writing *meaninagh* or *maynenagh*, the middle islandman or the monkish islandman. Yet use the word *ellan*, an island, and you do not say *yn ellan veanagh* or *veaninagh*, the middle island, but *yn Ellan Manin*, the island Man-isle, or *Ellan Vanin*, the island of Man-isle, whilst *meanin* is literally the middle of the island, not the middle island. Nor is there an instance where the word *mean* is pronounced with an *a* short" (Dictionary, sub voc. *Manninagh*).

Dr. Kelly suggests that the name Mann may have been derived from Mannus, the Teutonic deity, and may have been given to the island by the Northmen. The name, however, doubtless existed anterior to the piratical invasions of the island by the hosts of the Vikingar.

According to Feltham, the name is supposed to have originated in "*Maune*, the name of St. Patrick, the apostle of the island, before he assumed that of Patricius." Mr. Train has adopted the etymology of McPherson. The late Rev. J. G. Cumming, in the Appendix (A) to his "Isle of Man," says:—"I am inclined to derive it from *maen*, a pile of stones or rocks;" but, subsequently, in a note to Sacheverell's "Account of the Island," edited by Mr. Cumming, and published by the Manx Society, he says: "On an ancient cross in the wall of the churchyard of Kirk Michael, we find the name of the island spelt in old Runic characters, 'Maun'. It is thus evident that the broad sound was given to the *u* in Mân and the *o* in Mòn or Mona; and this ex-

plains in some measure the various orthographies of the name of this little island. I am of opinion that the name anciently given to it in common with Anglesey, had to do with the reputed holy character of the isle, as the *Sedes Druidarum*, the abode of the holy wise men, and that it has the same connection with the Sanskrit root *Mân*, in reference to *religious knowledge*, as our word *monk*; so also *Moonshee* and the names of ancient law-givers, as *Manu*, son of Brahma, *Menu*, *Minos*, and *Menes*."

Mr. Cumming was mistaken in supposing that Druidism obtained in this island. There is not the smallest evidence to warrant the supposition that it was "the *sedes Druidarum*." Hence "the holy character" implied by Mr. Cumming's etymology is inapplicable to Mann.

Unable to adopt any of these etymologies, I shall endeavour to trace the name Mannin or Mann, to what I believe is its true origin. The names of ancient tribes invariably preceded the names of the countries which they occupied. Mann was originally inhabited by a tribe of the primordial race which populated Ireland. This tribe was called the Manninee or Mannanee, and is still so named in the Manx Erse. Manninagh denotes native, and Manninee, natives of Mann. The name Mannin or Mann was borrowed from that of the inhabitants, and denotes the land or country of the Manninee. In the same manner, Helvetia took its name from the Helvetii, Aquitania from the Aquitani, Gallia from the Galli. The discriminating Camden asks: "Who can deny but the names of the Jews, the Medes, the Persians, Scythians, Almans, Gauls, Gætulians, Saxons, English, Scots, etc., were extant before those of Judæa, Medea, Persia, Scythia, Almaine, Gaul, Saxony, England, Scotland, etc.?"

Mann is called by Paulus Orosius Mevania, a name adopted by Bede, who, confusing the names of the two islands Mann and Anglesey, calls them "the Mevanian Islands." The name Mevania was subsequently copied by Florence of Worcester, Williams of Malmesbury, and others. Camden observes that the name is in Bede and Orosius falsely read *Merania*, and writes it *Menavia*. Buchanan had previously suggested the error. The word given in the "Chronicle of Richard of Cirencester" is still more nearly correct, for it is there written *Manavia*. The substitution of *n* for *v* in Mevania, as suggested by Camden, is doubtless an emendation, but there is no reason why the *n* should be changed to *v*. The original *n* ought to remain, and the word would then be *Menania* or *Manania*, which is the present name of the island in a Latinised form, and means the country of the Manani. Thus *Manania* and *Manani* are equivalents of *Manan* and *Mananee* or *Mannin* and *Manninee*.

According to Dr. Kelly's interpretation, Mannin means "Man-

isle;" for he assumes that the suffix *in* signifies isle. It is true in *innys*, *inys*, and *ish* mean isle, but these are forms of the Latin *insula*, and belong to the Britannic rather than to the Erse dialects. The true Erse words for island are the Manx *ellan*, the Irish *oilean*, and the Scottish *eilean*.

I rather think that the suffix *in* has been substituted for the diminutive *an*, and that Man-an would be a better orthography than Mann-in is.

The origin of the name of a barbarous tribe may generally be traced to a word in the language of the tribe. It has already been suggested that the name Mannin or Mann is derived from Manninee, the name of the tribe by whom the island was originally occupied. The name Manninee or Mannanee denotes the Tribe of the Kid or Fawn. The word *mannan*=kid or fawn, exists in the Erse and Britannic dialects, and in other tongues. Some of its forms appear below.

ERSE.	{	Manx, <i>mann-an</i> .
	{	Irish, <i>mion-an</i> .
	{	Old Irish, <i>min-d</i> .
	{	Scottish, <i>mean</i> , <i>meann-an</i> .
BRITANNIC.	{	Welsh, <i>myn</i> , <i>myn-an</i> , <i>myn-yn</i> .
	{	Cornish, <i>min</i> , <i>myn</i> , <i>mynn-an</i> .
	{	Armoric, <i>menn</i> .

A trace of the word appears in the Saxon and English *hin-d*, the female of the red deer. It is an element of the Latin *hinn-a*=hind or mule, and of *hinn-ulus* or *hinn-uleus*=young hind, fawn, kid, or little mule; and also of the Greek *ivvos*.

The Manx adjective *mannanagh* signifies belonging, or relating, to kids or fawns. The plural of this word is *mannanee*, the exact name of the natives of Mann.

Among uncivilised races tribes are commonly named after chiefs or distinguished individuals, who are called after animals indigenous to their country. Professor Max Müller relates that "a celebrated war-chief *Adjetatig* (tombstone) of Wabojee, died on Lake Superior about 1793. He was of the clan of the Addik or American reindeer.....There is a grave board of the ruling chief of Sandy Lake on the Upper Mississippi. Here the reversed bird denotes his family name or clan, the Crane" ("Chips from a German Workshop," p. 317). I cannot further illustrate this part of the subject better than by quoting from a recent and admirable work by Sir John Lubbock, the learned President of this Institute. "The Hottentots also generally named their children after some animal.....In China also the name is frequently 'that of a flower, animal, or such like thing.' In Australia we seem to find the totem, or, as it is there called, kobong, almost in the very moment of deification. Each family, says

Sir G. Grey, 'adopts some animal or vegetable as their crest or sign, or kobong, as they call it.'.....The totem of the redskins, says Schoolcraft, 'is a symbol of the progenitor—generally some quadruped, or bird, or other object, in the animal kingdom which stands, if we may so express it, as the surname of the family. It is always some animated object, and seldom or never derived from the inanimate class of nature. Its significant importance is derived from the fact that individuals unhesitatingly trace their lineages from it. By whatever names they may be called during their lifetime, it is the totem and not their personal name that is recorded on the tomb or adjeditig that marks the place of burial. Families are thus traced when expanded into bands or tribes, the multiplication of which in North America has been very great, and has increased in like ratio the labours of the ethnologist. The turtle, the bear, and the wolf appear to have been primary and honoured totems in most of the tribes, and bear a significant rank in the traditions of the Iroquois, or Delawares.'

"Thus the Osages believe themselves to be descended from a beaver, and consequently will not kill that animal; so also among the Khonds of India, the different tribes "take their designation from various animals, as the bear tribe, owl tribe, deer tribe," etc., etc. The Kols of Nagpore also are divided into keelis or clans, generally called after animals, which in consequence they do not eat.

"In Southern Africa the Bechuanas are sub-divided into men of the crocodile, men of the fish, of the monkey, of the buffalo, of the elephant, porcupine, lion, vine, and so on." (The Origin of Civilization and the Primitive Condition of Man, pp. 172-4.)

Pliny, in a list of names of islands, stated by him to lie between Ireland and Britain, mentions Mann under the name Monapia. Ptolemy includes it among the islands on the eastern coast of Ireland, and calls it "Monaoeda (otherwise Monarina Monavia)." According to the last-named writer, a city of Ireland was called Menapia, which it is supposed stood in the present county of Wexford. The modern St. David's in Pembroke-shire was anciently called Menevia, and by some authors Menapia. In "*Leges Wallicæ*" we find "*Meneuia est sedes principalis (episcopi) in Cambria*"; and again, "*Meneuia quia prima est ab omni debito soluta (est)*." In the Laws of Howel Dda it is called Mynyw. It has been suggested that the Menapii of Ireland and the Menevii of Britain were colonies of the Menapii of Belgic Gaul. Palgrave, in his "*History of the Anglo-Saxons*" says, in reference to Carausius, that "he was a Menapian by birth. The nation whence he originated had been divided by its migrations into several colonies: one

was settled in Hibernia, another was found on the islands of the Rhine, and the Menapia or Menevia of Britain, now St. David's, seems also to have belonged to these tribes." The names Monapia, Monavia, Mevania, Menavia, Manavia, Menapia, and Menevia are all apparently modifications of the same word. It is probable that they were formed from the Britannic Mân-aw or Môn-aw=(the Erse) Man-an or Mann-in. The suffix "aw" seems to have undergone a Latinised mutation, and to have been assimilated to the termination of the pre-existing name applied to a tribe in Gaul. May not the citizens of the Menapia of Ireland, and of the Menapia or Menevia of Britain have been colonies of the ancient Mannanee ?

DISCUSSION.

Mr. LEWIS observed, in reference to the religion of the early inhabitants of Man, that remains somewhat similar to those of Great Britain, which were attributed to the Celts, and which were believed by some to have been used for religious purposes, were found in Man, though those which he had seen presented some peculiarities which he had recently described to the Institute in his paper on the subject. We did not, however, possess such full information as could be desired as to the early religion of Great Britain itself, and we certainly had much less as to that of the Isle of Man.

Dr. CHARNOCK said perhaps what might be termed far-fetched etymologies were often the most reasonable ; he, however, considered the author's suggestions rather too far-fetched. Generally speaking, peoples were named by other peoples than themselves. Barbarous tribes no doubt frequently gave themselves names out of their own language : they very often called themselves by a name meaning men, as *Kanaka*, *Aino*, etc., or implying "nobility." He did not believe that any Keltic tribe had ever given to themselves a name meaning "the tribe of the kid or fawn." It would have been reasonable enough, if it had been possible, to name the Isle, in Manx, the "kids' isle" (*cellan-mannyn*, *i mannyn*, or *mannyn-in*). He did not think the author of the paper had improved upon the etymology of the name which had been suggested on the discussion of a paper lately read before the Society, viz., from *mon*, isolated ; hence *Mon ffynnydd*, "Mon of the mountains," i.e., Anglesea ; *Mon aw*, "Mon of the water." Indeed, from this *Mon Aw* we might have, by corruption, *Menavia*, *Monapia* ; by inversion, *Awmonia* or *Eumonia*, and by change of *m* into *b*, *Eubonia*. Other probable etymologies of the name Man might be from the British *mean in*, the middle island, or *myñ in*, the small island.

The following paper was also read :

VOCABULARY of ABORIGINAL DIALECTS of QUEENSLAND. By HARRIOTT BARLOW.

ENGLISH.	COONGURRI, NO. 1 (1).	WIERI-WIRRI.	NGOORIE.	YOWAL- LEMI.	COO-IN- BUR-MI.	BEGUMBLE.	CAMBOOLE.	PARRUN- GOOM.
Man	*Murr-di	My-ee	Dine	Dine	My-ee	Mel-lil	Mel-lil	Me-an
Woman	Mo-rang-ya	Es-nor-ra	Innar-ar	Een-ner	El-lay	Tar-mung-gie	Tar-mung-gie	Ea-rum
Child	Kan doo	Boor-ree	Be-ral lee	Be-ral-lee	Kow-i	Mal-lar-ree	Ka-gool	Nga-ba
Father	Yab-boo	Boo ar	Yow-or-dee	Py-e-na	Bowder	Kalli (u)	Galli (u)	Yab-boo
Mother	Yung-a	\$Nga-moo	\$Nga-moo-dze	Nghun-bar	Koo-ne-	Goo-a	Goo-a	Wee-ting
Brother	Tag-goo	Ea-goo	Di-ar-di	Day-ar	...[ghr	Mgg-grn-mee	Mtg grn-mee	Taj-ja
Sister	*Par-reen	Mim-mee	Ngar-gie	Bo-ar-dee	...	Pop-par	O-mka-ye, or Wun-dil	Taj-je
Uncle	Kang yung-illa	Mar ra	Kar-roo-jee	...	...	Wab-bil	Yab-bil	Now-tn
Aunt	Boor-goo-illa	Koo-noo-bi	Koo-noo-bi	...	...	Yan-grn	...	Bwee-a
Grandfather	Mand-yilla	Tee-ral-lil	Oo-mi	Bob-bi	...	Wear-mi	Wear-mi	Mee
Grandmother	Ka-mind-yilla	Mee-mee-gil-	Bar-gie	...	...	Mee-mung-gee-	Ke mtn-de-	Bwee-a
Daughter	Dir-gee-grn	... [lie	Nga-moor	...	...	Pin-dee-a [ree	...	...
Son	...	Nim-mee	...	...	...	...	...	...
Arm	Tir-roo	My-ya	+Boo-nung	Boong grn	...	Yan-na	Yan-na	Kin-ni
Hand	*Murr-da	Pol-la	Mar	Mär	...	Mär	Mär	När
Head	Toon-goo	Poo-ee	Tay-grl	Tay grl	Booye	Ka-booye	Ka-booye	Gan
Hair	Ktd-da	Poo-ee	Boo-oye	Booye	...	Tal-gie	Tal-goo ee	Boo-goon
Leg	Koon-gool	Pou-you	Pou you	...	...	Boon	Boon	Bou-you
Knee	Moo-goo	Poo-moo-lee	Mag gurr	...	Moo gurr	Boon	Boon	Koo-marr
Eye	Til-lee	Meel	Meel	Mil	...	Meel	Meel	Meel
Foot	Tin-na	My-yan	Tin-na	Ngai	...	Tin-na	Tin-na	Din-na
Mouth	Där	Ngai	Ngai	Ngai	...	Ngtn-der	Ngtn-der	Keo-an
Ear	Mung-a	Pin-na	Pin-na	Pin-na	...	Bin-na	Bin-na	Pin-na
Nose	Koo-oo	Moo-roo	Moo-roo	Moo-roo	...	Moo-roo	Moo-roo	Bud-yung
Tooth	Ee-ar	Ee-ra	Ee-ra	Ee-ra	...	Tee-ra	Dee-ra	Tee-ting
Bone	Yar-roon	...	Boo-ra	Boo-ra	...	Kool-loo	Kool-loo	Tee-al
Wrist	Bin-bin	Wäl-lil-la	...	...	...	Boom-boonye	...	Koon-doo
Chin	\$Ngn-ga	...	...	...	Yar-ri	...	...	...

ENGLISH.	COONGURRI, NO. 1.	WIRRI-WIRRI.	NGOORIE.	YOWAL- LERI.	COO-IN- BUR-RI.	BEGUMBLE.	CAMBOOBLE.
Turtle	Koo-ca-bur-rie	...	War-bür	...	q'fal-bäch-	...	...
Kangaroo-rat	Pand-wi	...	...	...	... [un	...	...
Black snake	Kab-bool	...	...	...	...	...	...
The young of black snakes	Zup-par	...	...	...	...	...	...
Brown snake	Doo-roo	...	...	...	...	...	...
Back-gunyah	Koo-ga (111)	Un-dar	Ngün-dor	Dar-der	...	Wün-der-mhl	Gil-loo
Stick, twig, bough	Pag-ga [goo	...	...	...	...	...	...
To build a shelter of bark	Koo-ga-ee-gal-	...	...	...	...	...	...
To build a shelter of boughs	Pag-ga-ee-gal-	...	...	...	...	...	...
Shield	Boor-goo [goo	...	...	...	...	...	...
Spear, waddy	Pag-ga	Mur-ra	Boor-reen	...	...	Bäng-a	Bäng-a
Nulle nulle	Moo-roo	Moo-ra	Kin-nee	...	...	Koo-bur-ra	Bag-goo
Boomerang	Wong-äl	Moo-roo-la	Moo-roo-la	...	...	Eu-loon	Eu-loon
Stone tomahawk	Barr-gün	Pär-rl	Bür-rl	...	...	Wäng-ul	Wäng-ul
Dilly-bag	Wind-yin	...	Dur-ri	...	...	Way-gür	...
Grass from which it is made	Kar-gin	...	...	...	Wind-ye	Boong-gie	...
Sinews of emu-legs and kangaroo-tails	Tün-gin	...	...	...	...	...	...
String made from same	Boo-ürl	...	...	...	...	...	...
Fishing net of kurrajong-bark	Bir-ra (iv)	...	...	...	...	Biz-za-wa-ray	...
Needle of kangaroo-bone	Big-gür (v)	...	...	...	Eu-lo	P'ee-keo	...
Yam-stick	Kün-na	...	...	...	Kün-ni	...	...
Fire-stick—pine torch	Boor-di	...	...	...	...	...	...
Coolteeman	Poom-bar	...	Bil-gar	...	Dal-la-la-ri	Goon-däl	...
Kurrajong-bark	Ma-ar	...	...	...	...	Koo-moo	...
Edible root of kurrajong	Oon-gar	...	...	...	...	T'a-ran-däl	...
Edible seed of blue water-lily	Tar-kea	...	...	...	...	T'a-kea	...
Edible stalk of blue water-lily	Toon-boo-rooyne	...	...	...	...	Toon-boo-rooyne	...
Edible root of blue water-lily	My-ee-gür-ra	...	...	...	Too-bool	My-ee-gür-ra	...
Water-yam	Pal-al-ban	...	...	...	Bool-lul	War-ru-goo	...
Edible orchid	Koond-yal	...	...	...	Mee-lang	Yac cl	...
Grass tree, or edible part	Yee-goön	...	...	...	Dög-ga	T'ag-ga	...

A grass growing in plains	Eel-lee (vi)	...	Ning-il	...	Bi-ri-ga	...
A grass growing on sand ridges	Nhi-run	...	Oo you mar	...	Pir-rin-gun	...
A grass growing in lagoons	Koo-mar-gie-ar, "	...	Boo loo re an	...	Ko-ag-gul	...
Grinding slab for grass	Pullar	...	...	...	Eul lar, or koo rie	...
Small upper grindstone	Mur-ra-gtney	...	...	...	Boo roo gar	...
Now it is ground	Yang-gul-li-bar	...	...	...	...	...
To bake or roast	Wa-dool-goo	...	...	...	...	...
It is ready	Eu-gul-goo	...	...	...	...	...
A large sweet yam	Goo-a	...	...	...	...	...
To dig up yams	Goo-a-bung-al-	...	...	...	...	...
A hole	Eu-na [goo	...	...	...	...	...
To bore a hole	Eu-na-bun-bung-	...	...	...	...	...
To sew	Tar-al-goo [a	...	...	...	...	...
I, you, to me	Ng-i-a, ngin-nee,	...	...	...	...	...
Eat your food	nga-djoo	...	...	...	...	...
Come here	Yeu-gung a-nung	...	...	...	Ind ya tul la	In na dul la
Go away	Oo-ca mün-di-ar	Ti a nung	Ti-a-ni	Di a nung a	Ur ree a bur (buch)	Oon gee a bur (buch)
Are you going away?	Coon-do mün-di-ar	Yi-aye-a nung	...	Oo ling a ray a ni	Lu a a buch a	Eu a a buch a
Where are you going?	Coon-doo mün-dung-a	...	...	...	...	...
I want to go that way	Tee an de mün-dung-ging-a	...	...	...	Wunda unda eu a	...
When are you coming back?	Ng-i-aga ga mün-dung-a	...	...	...	...	...
I am coming back soon	Un di me a ka-nung-a	...	...	...	Wind ye la ur ree kee a ga	Wind ye la oon-gee aye ya
Fetch water	Ka-bo, koo-ra-ka-nung-a	...	...	...	...	...
Sit down	Ka-moo toon-gty a	Kal lee te ral-la	...	...	Gul li wün di il la	...
Get up	Pin dal goo	We ear	...	...	En nng ga	...
	Tan al goo	Way air	...	...	Ka rüg ga	...

ENGLISH.	COONGURRI, NO. 1.	WIRRI-WIRRI.	NGOORIE.	YOWAL- LERI.	COO-IN- BUR-RI.	BEGUMBLE.	CAMDOOBLE.
I want to talk to you	Ngi-a nul gal goo	...	...	...	...	A bo gie bar	...
Be quiet—I want to be quiet	Moo-ler hindul- goo, mindul- goo	...	...	...	Me-lan de- ngoo rang a	Dang-a lang-a	...
I want to go to sleep	Oogar oo-nul-goo	...	...	...	U-a-ngoo rine	Day e gar	...
Go to sleep!	Oo ny a doo	...	...	...	...	Oo ra dar ga	...
Go, walk about	Min di me-tung-a	Yen nay ree	...	...	...	En a put yoon	A mi-c-illa a- nung illa
Hungry	Poon gur	Yean-yung	...	...	Yean yin	buch a	...
I am hungry	Ngi a a poon gur	...	...	...	...	Dil-gio	...
Give me food	Ngi-djo ya nime	...	...	...	...	Nger djo dil-gie	...
Meat	Too-rayno	Do-di-woon na (give me meat).	...	Doe	...	May	...
Good	Mee gung u ree	...	...	...	...	Woe ind yin	Win bar
Bad	Wong ga rung	Mur-rü-bar	...	Kab-ba	...	Am-hoo	...
To become sick	Karoo wa-gung-a	Kar-gil-lal	...	Kog-gil	...	Woo-rayn gi-in	Ka-ree i ya
Sick	Kang-ey, or Ka- ree	...	...	...	...	...	Ka-ree
Little	Kar-roo nar-ar	...	Wa ri too	Too-ga-too	Wa ree	Ka good be ya	...
Large	Mul ga yir ra	...	Boo-rool	Boo-rool	Boo roo rul li	Moor-runye	...
To travel—or, you go far away	Cam bar ri wa lul goo	Mi-tay yun nar ee	...	Bo ra goo nay ree	...	Bi-gir ra be al- gung-i	Oom boo a boy ye
Swim	Oom be ral goo	Bar-bee	...	Goo bee	Mün a yung a	Goom-big	Goom-bee
Dive	Boon nar tar kul goo	Oo yung ay	...	Oong aye	Oo gung ya	Bind yal li	...
(To a child crying for its mother) "By and bye she will come back"	Ka-hoo ka nung-a	...	...	...	Bi e nung il	Ba boo, tung i e ayo ya	...

(Calling to the mother) "The child is crying"	Oh!	...	Ka-wi n	Mal ler eo, doong	...
Run quickly to me!	Oo eeo a kán-di-ar	Boon-bile (run)	geu a nah!	ee oh!	Oongee ar níng
Make haste!	Kar-ka!	...	...	bar	Y gar
The men are fighting	Marr-di once me	...	My ee,	Kow ow!	...
	ung a (vii)	...	boon a lng	...	...
The poor fellow is dead	Warr ' ' oo la, oo	...	ga ray	...	...
To bury	la la	...	...	...	...
Quick	Un dee, am al goo	...	Toon goon	...	...
Slow	Thay	...	lual li	...	...
	Oo dja	...	...	...	...

* In words thus marked, the "r" is guttural, and much dwelt on.

† Where "n" is used, the sound is open, like "oo", but perceptibly shorter; "n" as in undo, etc.

‡ "Gy" signifies that the "g" is prolonged till it terminates in a faint sound of "y".

§ "Ng" beginning a word is pronounced like "ng" in king, etc.

|| "K" and "d" are written when the sound is much shorter than the usual "doe", "reo", etc.

¶ "Ch" in words thus marked sound as in the German "ich", etc. "i" is always hard. There is no "f" sound.

The numerals refer to notes on p. 173.

ENGLISH.	COONGURREI, NO. I.	WIERI-WIERI.	NGOOHE.	BEGUMBLE.	CAMHOOBLE.
One	Wung-gar-ra	Moo-ray	Be-aye-ya	Bar-dja	Bar-dja
Two	Bool-lar-re	Bool-lar	Bool-lar	Mur-ra, pool-lol	Kee-lum boo-lar
Three	Bool-lar, wung-gár-ra	Be-lar, moo-ray	Be-lar, be-aye-ya	Pool-lol, bar dja	Kee-lum boo-lar, bar-
Four	...	Bool-lar, bool-lar	...	...	...
Five	Kar-goo-ray	Mang-oon-bal-la	Koo-lac-bar	...	[dja
Many	Koo-lac-hee-ree	Mon-gin, mon-gin!	Bool	May-lur-ra	...

Most of the blacks, when asked to express a number beyond three, give the word signifying "many", or else say, "that's all, no more my talk". Yet many of the younger men can count well in English. We had, last year, on the station, a young black fellow who could count a flock of sheep (say 200 to 1200) as they ran through the yard-gate.

ENGLISH.	COONGURRI, NO. 1.	COOINBURRI	BEGUMBLE.
Devil-devil	Wid doo	Wun-da	Coo oon
Doctor (VIII)	Wid doo wer ri	Wunda wūr- ii	...
Elder, ruler (IX)	Wad you run	Wy a ma	...
A festive meeting	Mee djur	Boo er e you gul	...
To sing, or let us sing	Bind yal goo	Boo roo	...
To dance, or let us dance	Tinna goo ga ral goo	Eu loong ie	...
Bora	Kum ba	Kum ba	..
A madman, idiot	Wam ber um ber ra	...	...
A man with one eye	Tillee mud-jee mud-jee	...	...
To tattoo the breast and arms, etc.	Moon-gūn bar bil goo	Moo-birr(the scars)	Be lind ee wa nūg gie
Yes	Yo-o	...	Wi
No	Kur-ra	...	Yag ga
Which way did he go?	Jee ar ray lay	...	...
I don't know which way	Kur-ra tee ar ray lay	...	Wind yag ga kee nar
Don't stand there	Kur-ra tūn al goo	...	Yag ga teel ag gi
The sun is ascending, or the eastern quarter of sky	Too roo wa-gung-a, or Too roo oor būl la (x)	...	...
The sun is declining, or the western part of sky	In-dur ul-ler-doo, or Mund ul-ler-doo	...	...
I do not understand	Kur-ra te ray eem bung a	...	Tee an ee nug ee a
What do you mean?	Ngūn nee in-dur nūl gunga?	...	Me na ta gun ee gar ar
Nonsense!	Wūr-gine!	...	...
That will do!	War ra!	...	Kal-loo

ENGLISH.

CONGURRI, NO. 1.

I break or have broken it.

I will mend it

What did you tell me?

That way

I say I am going that way

I am very frightened

Did you call me?

The sun hurts me

Poor fellow!

He cannot work

The sun hurt him yesterday

Shall I help you?

What are you laughing at?

Soon, early

To-morrow

Yesterday

I will go early to-morrow

The man is very lazy

Ngi-a in-dur goon mūng a

Ngi-a pūn bung a

Ngun nee ngūl gul la nga djoo

Bool lee

Bool lee mun dung a doo ngi-a ngūl
gūl la

Ngi-a ee ding a

Ngūnnee ngul gul la?

Too-roo koo bun-dung-a

Kun nun, gun nun!

Kurra wā-ing a

Too-roo me-ung-ge-roo koo bun-
dung-a

Ngi-a tur ra mūl goo

Ngun-nee goo ya dinna

Kaboo

Boo-loo-goo, or Moo-ga-roo

Me-ung-ee-roo

Ka-boo mon-dunga moo-ga-roo

Mūr-di ti-il boo dee ing a

ENGLISH.

COONGURRI, NO. 1.

Two men are approaching	Bool-lar ree murrri oo goo oor wal la
A tree	Tee-woo-roo
The tree is growing up	Tee-woo-roo wa-gung-a
The child is growing tall	Kandoo wa-gung-a
Blossoms	Booda booda
The blossoms are unfolding	Booda booda pā goon
Shrubs or underwood	Ta-nung-a
The underwood is springing up (from the earth)	Ta-nung-a ee-ral-lee
Paint	Coo-dee
I am going to paint myself	Coo-dee ngum ber aylg
To skin an opossum	Koo-ree oo-ral-goo
To climb	Wa gul goo
To cut out (opossums)	Pun djul goo
To put into	Eee-dal goo
To throw	Bid jul goo
To throw a boomerang (so that it re- turns)	Wongul bid-joor-lil

Proper Names.

MEN.

WOMEN.

Coo ma goo	Ya boong goo
Ma-dun-na	Yeu rin
Ky ar ra noo	Ba būn doo
Koo roo roo	In yal la
Bwey own ye	Tal lal loo
Ka doon noo	Boong gul ngung ya
I-dew ling a	Boon di doo
Yeh-del	Bin dang ye
Ind ye gul li	Be aye vung a
Boom boo lair	Tin-bil-li
Toor-rūn	Oor-da
Boon dūr	We ree djee
Mar ba roo	Won dung yil
Ma zan da	
Yel ler gen mul ler, nicknamed Tin-na dee, club-footed	
Bing a	
A-boong-ing-eu-la	
Noo na na mil-la	
Kūn-djar jūm	
Mand ye wal la—Bim bi-gal-lair, or Bim bi gal lair (son of) Mand ye wal la.	

Yehdell's Version of some Corroborree Songs, and his Translation of the same.

1. "Wurri mung-a-na ngi-a nūg a la ill-boo nga-djoo mār la."

"Wurri-mung-a-na"—that old fellow, black fellow name, been die long time ago; "ngi a nūg a la"—that song tell him, mine been see Wurri-mungana one time; "ill boo"—that live in bush, missis, bael you know that fellow, I think, white man call him caterpillar, plenty fellow crawl about, altogether live in nest 'long a tree; "nga-joo", that belonging to me. You see, missis, 'nother black fellow come up and tell Warrimungana, "what for you take caterpillar that belong to me?" "mār la"—that tell him I caught them 'long a hand, like it this way.

2. "Būdge e-rūl ngi-a nga-joon, dī ar."
A bit of iron-bark I to you give.

Wägga-Wägga Song.

3. Olg ooman ngün ya ee a ma	An old woman told me
Boorga pin na mun ni nar	She thinks she hears "mun ni nar"
Gay-ro, gay-ro!	The splashing of water.

"Olg ooman"—that white fellow's talk you know, missis, old woman! "ngün-ya ee-a-ma"—that's been telling me; "boor-ga"—that fellow thinks; "pin-na"—this fellow, missis touching his ear; "mun ni nar"—bael me know what that say, bael this song my talk, only plenty black fellow sing him all about—you see that want to tell him old woman frightened, that cobon dark, she thinks she hears somebody bogie bathing; "gay-ro, gay-ro"—like it this way, beat the water, then it jump up—Splashing?—Yes, that's the way, hear him water splashing.

In singing all Corroboree songs the blacks keep repeating and transposing the words; apparently making utter nonsense for the sake of varying or preserving the rhythm, to suit their fancy or adapt it to the tune.

NOTES.

i.—The Coongurri come from the Maranoa or perhaps even the Warrego river, and have evidently followed the main road leading through Roma to Condamine, dispersing themselves over the neighbouring stations, but chiefly bearing southward. This is a very large tribe, and is sub-divided into families, each having some peculiarities of dialect; but the words I have obtained appear to be in current use amongst all the blacks in this neighbourhood. Even individuals of Ngoorie, Begumbe, and all other tribes, as a rule, understand and speak the Coongurri (No. 1) dialect in addition to their own. The reason is perhaps to be found in the numerous marriages of Coongurri women with men of the more southern tribes, especially the Wirri-wirri. This last named tribe belongs to the Balonne country, and is nearly allied to the Wirri-teuri, further down that river. The Ngoorie and Yowallei tribes, also closely related to each other, inhabit the country towards the Mooni river. The Begumbe, Cambooble, and Yangumbe tribes are found in the same direction. The Coo-inburri is a Mooni tribe, and the Parrungoom reside further south, between the Mooni and the Barwon.

ii.—Kallee, water (Wirri-wirri); Gooa, yam (Coongurri); Gooa, mother; Galli or Kalli, father (Begumbe and Cambooble).

iii.—None of the blacks to whom I have spoken have any word to express a place of shelter. When pressed, they will say, "Koo-ga that's all, missis"; or else (in their own language) "much bark," "little bark," or "build-up bark."

iv.—This word has a sound between "bizza" and "birra." I should prefer to write it bizza, but for the persistency with which the blacks corrected me.

v.—These tomahawks, formerly used by the natives, are generally made of a slate-coloured stone.

vi.—The grasses were ground between two stones, and then made into a sort of damper. The Coongurri have no word for flour.

vii.—There seems to be no plural form for nouns.

viii.—The doctor or devil-chaser is a person of great influence among other tribes as well as his own. The art of devil-chasing is considered a natural gift; and whereas all Wadyoorun, or rulers, are old men, many of the Widdoo-werri are quite young. There are degrees and specialities among the members of the profession, some devoting their talents exclusively to the cure of children's ailments. They have a great idea of the efficacy of blood letting, and the operation is generally conducted by gins—the doctors being too wise in their generation to damage their own beautiful teeth. A long string is attached to the patient's body, and two women, taking each an end, retire a little distance and sit down by the side of a small hole they have previously dug in the earth; then, holding the string with both hands, they saw it backwards and forwards between their teeth, until the gums and lips bleed; this blood, they believe, comes from the patient, and they continue to saw vigorously for several minutes, only paus-

ing to spit the blood into the hole. I have seen their lips raw for days afterwards.

ix.—In some cases it is not etiquette for a young man to approach an elder; but whether the rule applies to all kings and doctors, I have not been able to ascertain. In the example which first came under our notice, Yehdell, a young Coongurri, wishing to give a Yangeumble doctor some tobacco, asked the gentleman at whose camp they were, to hand it to him. He afterwards explained that if no one else had been present he would have laid it on the ground for Jemmy to pick up. He also begged the gentleman to ask Jemmy to lend him a paunikin. Being afterwards questioned as to whether he had quarrelled with Jemmy, or was afraid of him, he said, "Oh! no, bael you know what for me do that way—white fellow not like that; you plenty talk to master; only bael black fellow want to come up close to some black fellow—that no good." I am told Jemmy also claims respect from Yehdell, on the score of relationship to his wife. "You see, missis, bael Jemmy uncle belonging to Yehdell—only messmate like it uncle" (Not exactly Yehdell's uncle, but some relation to him). Poor little Yehdell's matrimonial troubles are great, and I am afraid the kings and elders tyrannise over him sadly. He is a plucky little fellow, very intelligent, and with a keen sense of humour, but too domineering and pugnacious. Last year he took to wife a pretty young gin, named Fanny, and they were living happily on Murilla Station, when a sort of free fight took place in camp, and Fanny's aunt (a mis-shapen dwarf, who seems to act as general sick nurse among the natives) got excited and plunged into the fray, brandishing a yam-stick. The story goes that she was on the point of spearing Yehdell in the side, when he broke her arm with his waddy. And hence date his domestic troubles, for the rulers sent his wife away to the camp at Noorindoo Station, on the Balonne, having, in council, decided that he could not love her, or he would have spared her aunt. Lately, when Yehdell was over here, Fanny came up, bringing their little baby, but either was sent away, or returned of her own accord to Noorindoo, before daylight next morning. Yaboongo, a very pleasing, intelligent Coongurri gin, told me Fanny would not stop, although Yehdell was "cobon good belonging to her," and "too much like him picanny" (was exceedingly pleased with the baby). Then she and old Boondidoo told how "last night" Yehdell sat bending over the baby and hushed it to sleep. "My word, that fellow cobon cried belonging to Kandoo"—because he might not keep it. They seemed to pity him, and said, "You see, missis, good many moon now, that fellow give always plenty flour, plenty sugar, plenty money, shirt—everything belonging to Bungidoo." From which it appears the elders exact nearly all Yehdell's rations as well as his earnings, as compensation money for the injury done to the dwarf.

x.—Having noticed in a Sydney paper a vocabulary of some coast tribe, containing words expressive of the cardinal points of the compass, I have endeavoured to ascertain whether these tribes have any such knowledge; but can get no answer except "this way," "that way," "ah! sun want to come up there," "by-and-bye sun go down that way." Then, having named north, south, east, and west several times, and explained the terms, I point north, and say, "White man tell—me go north—which way you tell him, me go north?" But the answer is always, "Bael, only me go this way—bael blackfellow tell him north." "Ah!" (pointing west) "which way you tell—want to go west?" "Yes, yes, Missis, sun go down there—by-and-bye sun down."

DISCUSSION.

Dr. CHARNOCK, after referring to the calculating powers of some of the natives, said he had examined the dialects in question, and there appeared to be a considerable resemblance between them. He noted an interchange of the radicals *b* and *p*, *b* and *m*, *p* and *m*, and *m* and *k*.

MODE of PREPARING the DEAD among the NATIVES of the UPPER MARY RIVER, QUEENSLAND. No. II. By A. McDONALD. (Communicated by W. BOYD DAWKINS, Esq., F.R.S.)

THE following extract from a letter of Mr. McDonald completes the account of the very singular funeral customs of the aborigines of the Upper Mary River:

“Upper Mary River, Queensland, July 31.

“I will begin with the skin, as I have seen at least three of them; and I will tell you how I saw the first. I had a mob of blacks camping close to my house, about four years ago, and some of them stole—well, that is a harsh word—took some of my sweet potatoes out of some ground which I had dug and planted; so I thought the sweet potatoes were mine, and I told them so. Of course, none of them had taken any; they all denied it. I got vexed at this, and determined, if possible, to find out the culprit. By this time they were on the march, and I followed them and overtook some of them in the scrub; amongst others, an old woman, with a very bulky swag. I called a halt, and ordered the old lady to unpack, when they all began very earnestly to remonstrate with me, assuring me that she had not got them; that they were on ahead, and if I would let her go they would bring them back. However, I fancied all this palaver was to get rid of me; so I insisted. They then told me that the old woman's *son* was in the bundle. I did not believe them, and told them so. When they saw they could not get rid of me, she very reluctantly untied the bundle, and I was certainly surprised when she showed me the skin—not all of it, but as much as satisfied me. I saw the head with the hair on, and the hands sticking straight up, one at each side of the head, the fingers distended. I felt sorry for the poor old woman, who handled it as tenderly as if it had been a baby. Since then I have frequently seen the large bundles; and once I had an old woman working for me several weeks. She had her boy's skin all the time, and was very careful to keep it warm, thinking, poor old woman, that her boy could still feel. I got on the weather side of her one wet afternoon when we could not work. I sat down with her in her gunyah, and gently and gradually got the history of her boy. He had been about eighteen, and had been killed. She cried so bitterly, and seemed so sorrowful, and not at all vexed when, at length, I asked her to let me look at the skin. She first looked all round, to make sure that no other blacks or whites were close at hand, and then commenced to untie the rags it was wrapped up in, and as she did so she commenced a *wail* such as is almost impossible to describe—so intense, so heart-piercing, that even I, white fellow as I am,

forgot I was white, seemed to get completely fascinated, and joined the poor mother in mourning the untimely end of her boy. It was a scene never to be forgotten—the tall, gaunt old woman, the miserable wet day, the bark gunyah, the skin, the rags, and above all the mournful wail when the skin was uncovered. She seemed to get worse; took it on her knee, rocked it, held it to her breast, then held it at arm's length, until I began to think she would lose her reason in her great sorrow, and was glad when she suddenly recollected that it was cold and wet, and wrapped up the skin again, covering it with all the clothes and blankets she had, and sitting naked herself. The skins then are carried about, and mourned over many moons. Often at night I have heard the wail from the camp; it is heard miles away, for all hands join, and a kind of dirge is sung, the time being well kept. A piercing cry starting each time, all then join; it gradually dies away, and then again the shriek, and so on. I believe Dr. Lang says they are used to cure certain diseases. I do not think so. After being carried about for a year or more, they are either buried, or hung up in a hollow tree in the country to which they belong.

“I have often tried to get a skin, but never could; yet I have offered a pound for one: but I might as well offer ten pounds. However, I still keep trying; but it is a very difficult and delicate point to touch upon. My old man, ‘Baa poor Undah,’ has promised me his when he dies; but then, as he will not have the disposing of it, the chance is not good. When the skin is dried, it is stretched on spears, which have then a peculiar virtue imparted to them—that is, when thrown in battles, they cannot fail to hit their mark.

“‘The bones,’ when scraped, are distributed amongst the relatives and friends of the deceased; hence the difficulty of getting an entire skeleton of a full-grown black fellow: and again, the most of them are broken to get out the marrow, &c. I believe they are again collected, after being carried about for some time, and hung up in a tree; but I have walked about the country a good deal, and not yet seen one, so I cannot be certain upon this point.

“‘The destination of the soul.’ Now, this is a point that I am at present trying to work up, and would therefore prefer not to give surmises of my own, or statements of others, which are, I think, not borne out by facts. I think it is of the utmost importance in questions of this nature to be very careful. So, then, at present I am unable to answer this question further than stating definitely that they do believe in a future state. This will be (even now) is a very difficult subject, because most of the blacks have got hold of some orthodox opinions about future

rewards and punishments; and it is very amusing to hear their ideas. For instance: 'Billy' tells me very gravely, 'Supposing black fellow, Bloody Rogue, then um bony, divil divil put him into big fellow pot, and make um soup. An supposing that budgerri fellow, then that go along tae, and altogether mess-mate along a white fellow.' Then follow a number of questions as to the work when there, what kind of food, and generally half questioning, 'Ball grog, I believe? Eh, you think it? Plenty tobacco?' and so on in these childish questions. And during a long conversation, perhaps a little real light may or may not be thrown upon their own purely native ideas of the future state. But I will let you know as soon as I can confidently give the particulars. And now we get to the last question—viz., about the 'flesh.' You do not appear satisfied about the manner of disposal of the flesh, probably thinking it was very wasteful of them to bury good food; but then you forget that this was a particular case, where, as one of them remarked to me, 'Arrah-Donal Caal, you go close up that fellow, Ca-bou stink;' so perhaps the cause of death, or the not very sweet smell after death, may have deterred them from in this case partaking freely of what is beyond doubt with them a great luxury. Even in this case, I believe I have sufficient substantial, and also corroborative, evidence to warrant me (reluctantly I must confess) in stating that they did eat a part of the flesh. You may remember I left at a time when I certainly should not have done so. The head, legs, and arms had been removed from the trunk; it had been opened; and the so-called 'stone' had been handed round for inspection: those not cutting up were mostly all busy scraping, or cutting the flesh from the bones, excepting those on the look-out. Several pieces of flesh which had been cut from the bone were roasting on the fire, while, as I think I stated, one old gin was greasing herself with a piece of fat. The two holes were dug, and a quantity of wood ready to pile on the top of the holes, after they were filled in with earth, over the flesh. Now, you ask, did they not dig up the flesh again and eat it? I think not, and I will tell you why I think so. Certainly there were plenty of them to have eaten the lot, good and bad; but they were not hungry I know, and they were very careful to keep all dogs away during the whole of the ceremony, evidently thinking that it was not at all proper for a dog to get even near the body. Now, they could not, under any circumstances, eat the entrails, &c.; and as there are always native (that is, wild) dogs, the 'Australian dingos,' prowling about, what is not eaten, or carried away, must be buried, or otherwise well protected from these dogs. Now, the systematic way that the gins went about scraping out the holes with their yam sticks, leads me to con-

clude that it is a regular part of the ceremony. I have visited the place twice since, and am quite satisfied the holes have not been reopened; but there has been a good fire on each.

"I am, as I said, obliged to confess that the natives eat the flesh of some of their departed friends, and evidently think by so doing they are both benefiting themselves and conferring an honour upon the dead. It is not done altogether from a craving after human flesh, although I believe that some years ago it was not so, and that then the old men were remarkably fond of a piece of a young gin, nicely roasted. Now, however, intercourse with the whites has caused them to drop this to a great extent, and now the gins are often buried whole, and the children are also; but the men are still eaten, especially chiefs. And I have heard of cases recently where tough, skinny, old fellows have been faithfully eaten, although they could not have been very juicy. The reason, I am told, is that by partaking of the flesh of a person, they inherit the virtues of that person."

The meeting then adjourned.

MAY 20TH, 1872.

DR. R. S. CHARNOCK, *Vice-President, in the Chair.*

THE minutes of the last ordinary meeting were read and confirmed.

W. H. PAYNE, Esq., of 42, Limes Grove, Lewisham, was elected a Member.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the SOCIETY.—Journal of the Asiatic Society of Bengal, part 2, No. 4, 1871; Proceedings ditto, December, and Appendix for 1871 and No. 1, Jan., 1872.

From the AUTHOR.—The Stone Age in New Jersey, 1872. By Dr. C. C. Abbott.

From the EDITOR.—The Food Journal for May 1872.

From the EDITOR.—Nature, to date.

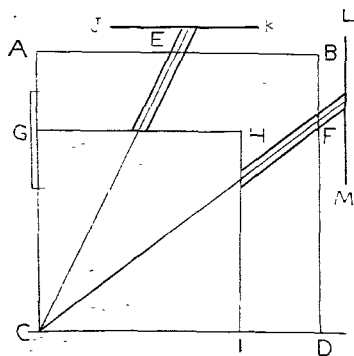
From the AUTHOR.—Syed Ahmed Bahadoor, C.S.I., on Dr. Hunter's "Our Indian Mussulmans: Are they bound in Conscience to rebel against the Queen?" By "A Mohammedan."

From the EDITOR.—American Eclectic Medical Review, vol. vii, No. 9.

From the EDITOR.—Man in the Past, Present, and Future. By L. Büchner.

From the EDITOR.—The Journal of Psychological Medicine, April 1872.

Mr. JOSEPH BONOMI exhibited a new instrument for measuring



On the line ac measure off from the floor $4' 3''$, from which point g draw the horizontal gh , and from the point h , which is $4' 3''$ from the perpendicular ac , draw down to the floor the line hi . Now draw the horizontal jk at $6' 6''$ above the floor, and the perpendicular lm at $6' 6''$ from the perpendicular ac . Lastly, produce the diagonal ec to the line jk , and the diagonal fc to the perpendicular lm . Now it will be abundantly evident that, if two scale strips of the instrument—viz., that for the head measuring $2' 6''$, and that for the arms measuring $2' 11''$, with their proper indicators stretching along the diagonal from the horizontal jk to the horizontal gh , and along the diagonal from the perpendicular lm to the perpendicular hi —be fixed against the wall at their proper angles, you would have the means of measuring all persons from $4' 3''$ to $6' 6''$ in height; and, as adult persons less than $4' 3''$ come under the category of dwarfs, and all persons exceeding $6' 6''$ come under the category of giants, and are, therefore, sufficiently distinguished by the peculiarity of growth, you would have the means of identifying all persons whatsoever who had been previously measured, provided always that a proper record of the measurements were kept.

the proportions of the human body, and communicated the following notes upon the same:—

[*Abstract.*]

With respect to the division into feet, inches, and eighths, or sixteenths of an inch, experience enables me to recommend the use of Waterlow's inch and eighth divided paper, by which means every instrument would be furnished with a perfectly identical scale. Strips of this paper, of one inch and a quarter wide, are cut at the proper angles, and pasted on that side of the groove which is lowest when the instrument is in position, while on the upper side of the groove is pasted ordinary cart-

ridge paper, afterwards to be divided into feet and quarters of a foot.

It may be useful to say a few words respecting the Record, as by an inconvenient division of its pages, much important information would be lost.

The first column must be for the date of the entry, another for the name and place of residence, the third column for the age. Then should follow two columns, over which should be written the word "height." In the first the number of inches, in the second the number of sixteenths of an inch together, making up the height of the person measured. Thus a man six feet one inch and a half, would be written off $73\frac{1}{2}$, *i.e.*, seventy-three inches and eight-sixteenths, or, if preferred, the column might be divided in three—for feet, inches, and eighths. Then should follow a little space and another couple of columns, over which should be written "width," in which the extent of the arms should be recorded in the same way. Then should follow a narrow column, in which should be written in printing letters L for long-armed, S for short-armed, and E against those the measure of whose arms are equal to their height. Lastly a wide column for remarks.

For police-offices there must be an extra column for sex, and one for trade or occupation; one for colour of the eyes, another for difference (if any) in the length of the arms, notifying which arm; and another for length of neck, *i.e.*, the measure of the space from the crown of the head to the pit of the neck, or the top of the clavicle; and a fifth column for length of hand. These two last measures could be easily taken by a small addition to fit on to the same instrument.

In conclusion, I venture to remark that, if every military establishment and every police-station in the United Kingdom were supplied with such an instrument, with a properly-divided ledger in which to record the particulars mentioned; not only would the identification of every adult person previously measured be secured, but a mass of information respecting the laws of growth, and the influence of trade or profession on those laws clearly defined.

Notes.—1. By a careful scrutiny of the naked body, is to be understood the usual practice followed in prisons and reformatories at the present time. In order to secure the identification of a prisoner in any one of these establishments, it is first of all necessary to put the person into a warm bath, to remove any artificial stains or marks. The person is then stripped to the waist, and two skilled scrutineers, one with a tape measure, the other with a book kept for the purpose, carefully notify every natural and permanent mark, mole, and cicatrice on the body and

arms, measuring its distance as to latitude and longitude from adjacent, well-defined points. This done, the lower extremities are subjected to a like scrutiny, and the whole operation cannot be adequately performed in less than two hours. When the person has to be identified the same operation must be performed, occupying scarcely less time than did the first; whereas five or ten minutes will be sufficient to perform both operations with the proposed instrument, and without the necessity of removing the clothes.

2. Count Joseph Borowlaski, a native of Poland, was precisely the height given by the scale to the smaller figure in diagram No. 1. He lived for many years in the city of Durham, much respected for his probity and urbanity, and died there in September, 1837, aged eighty-nine years, and was buried in Durham Cathedral.

3. Charles Byrne, afterwards called O'Brien, died June, 1783, aged 22 years. He was a native of Ireland, and was exhibited in London as the Irish giant. His skeleton is in the College of Surgeons, Lincoln's Inn Fields. It measures eight feet in height.

It is stated in an account that was published of his life, that he was unfortunately given to indulgence in alcoholic beverages. This statement is indirectly confirmed by his premature death, and more directly by the condition of his skeleton, from the quantity of oily matter deposited in the cellular structure of the extremities of the cylindrical bones.

In 84 persons, male and female, measured by the instrument, there were 54 long-armed, 24 short-armed, and 6 whose length of arms was equal to their height; total, 84. Therefore, out of eighty-four people, nine-fourteenths were long-armed, four-fourteenths short-armed, and one-fourteenth equal-armed; which are in the ratio of the squares of three, two, and one. The greatest excess in length of arms over height, five inches; the greatest excess in height over length of arms, four inches.

In the eighty-four persons there were not two whose measure of height and extent of arms were alike.

"Goliath, of Gath, whose height was six cubits and a span" (Sam. xvii, 4). If measured by the ancient Egyptian cubit, the six cubits and a span would be as near as possible nine feet nine inches, that is to say, one foot nine inches taller than O'Brien; the Egyptian ordinary cubit being as near as may be half an English yard. (*See* "Texts from the Holy Bible, explained by the help of the Ancient Monuments," By Samuel Sharpe, Esq. Russell Smith, Soho Square, 1870.)

DISCUSSION.

Mr. LEWIS thought Mr. Bonomi's instrument, if altered in construc-

tion (as he thought it might easily be) and made to fold up in a portable manner, would be very useful to scientific explorers in foreign countries, who would by its means be able to collect a large quantity of important statistics with very little difficulty.

The following paper was read by the author.

MORAL IRRESPONSIBILITY RESULTING FROM INSANITY. By
GEORGE HARRIS, F.S.A., V.P.

I AM desirous of submitting to the consideration of the members of the Anthropological Institute—a society devoted to the study of man, not only as regards his material and physical, but also as regards his mental and moral nature, and as such, by its experience and authority, calculated essentially to aid in the satisfactory solution of some very important, practical, and social questions connected with this subject—the following observations and facts, the aim of which is to establish, on the one hand, a correct theory respecting the nature and essence of the disease termed insanity; and, on the other hand, to arrive at some certain and satisfactory conclusion beyond what has hitherto been attained, as to the precise extent to which, during each manifestation and phase of the disease, moral responsibility ceases, so far as wholly to exempt the doer of any particular act while under the influence of the disease from legal punishment on account of that act. The subject of insanity is at once one of the most painful, one of the most perplexing, and at the same time one of the most interesting topics connected with the science of man. In addition to this, I believe that the study of the phenomena of mental disease affords a very useful aid to that of anthropology, and is calculated to throw much valuable light on the subject; as anthropology also in its turn is calculated to render essential service in the investigation of mental disease, and in arriving at sound conclusions with regard to it. The most opposite opinions, however, have been formed respecting insanity, and that by men well calculated to arrive at a correct principle here. Whether the mind itself is or can be subject to disease, or whether it is only liable to be affected by the ailments to which the body is subject in an infinite variety of ways, seems yet to be a matter upon which those who have investigated this topic are not all entirely agreed; although it appears most reasonable to conclude that what are vulgarly, and for the sake of distinguishing them from the common bodily ailments of the system, termed diseases of the mind, do in reality consist of some disorder of the brain, or other parts of the system through which the mind acts.

Disease of any part of the material frame, its substance, its

organisation, or its fluids, such as the blood, the animal spirits, or the nervous fluid, will produce insanity, if such disease is communicated to or affects the brain as regards its operation as the organ of the mind; while, on the other hand, disease of, or injury to, even the brain itself, will not produce insanity, unless it affects or interferes with the operation of the brain as the organ of the mind.

Insanity develops itself in various modes, and assumes particular aspects, corresponding with the nature of the disease that occasioned it affecting the material frame. Sometimes it consists in mental delusion. At other times its main characteristic is the overpowering influence which certain of the animal propensities or endowments have obtained over the actions of the mind. The intense and unrestrained activity of appetite or passion is another manifestation of its existence. Indeed, the emotions and passions themselves, when rudely excited by natural causes, will produce results akin to, if not identical with, insanity. The ancients termed anger a short madness; and according to Hobbes, madness is nothing else but so much appearing passion.* Moreover, many of the phases of insanity appear in inebriety (which is clearly occasioned by material causes), alike in wild frenzy, disorder of the mind, and mental imbecility.

Insanity is, however, of two main or principal kinds, which are distinguished according to the causes of its origination and the mode of its development. The first kind of insanity is that which is known by the name of idiocy, or imbecility, which consists in a weakness or deficiency, rather than a perversion as regards the operation of the mental material organs. In the other kind of insanity, which is known by the name of madness, the action of the mind is altogether misdirected and perverted, through the disease of the material frame in the way stated, and the consequent disarrangement of the material mental organs.

The essential distinction, indeed, between madness and idiocy appears to be this. In the former case, the machine is out of order, and will only work irregularly. In the latter case, it will not work at all. Insanity of the kind ordinarily known as madness manifests itself in three separate modes, corresponding with the three principal faculties of the mind: 1. Disorder of the understanding, as where the mind labours under some delusion, from erroneous ideas or impressions being conveyed to it, occasioned by some disorder of the senses, of the brain, or of the organs connected with it. 2. Disease of the reason, when conclusions altogether false and erroneous are formed, although the *data* for such conclusions are correct, but the mind is unable to apply them rightly. 3. Disease of the imagination, which arises

* "*Leviathan*", part i, ch. 8.

when erroneous combinations of ideas themselves correct are formed by the mind; and thus the imagination runs wild, whereby the mind is distracted and overpowered, and the person so suffering is led astray by various wild fancies, and loses all control over his conduct.

Insanity must, however, be clearly distinguished from the effect of a powerful imagination, which by its energy materially influences, though it is unable to control, the other faculties of the mind, and is occasionally by this means the cause of error in our mental operations; but which is very different, indeed, from wild and incoherent actions proceeding from insanity. Cases, too, of great eccentricity of conduct may be found, but where no trace of insanity is discoverable. The individual in question, though in some minor matters acting differently to the generality, still regulates his actions by reason; the data on which he proceeds are correct, and he is not led astray by wild and erroneous fancies.

We next have to inquire as to the strict proofs of the existence of insanity of different kinds; and here the leading authorities on the subject appear to differ as essentially as they do on most other points relating to this topic. Witness the contradictory evidence given by medical men on every trial where the plea of insanity is set up, and also on commissions of lunacy. Under the head of madness Plato classes, "that which arises from an inspired deviation from established customs",* which would include the case of every man of extreme liberal opinions. During the proceedings on a commission of lunacy which was taken out against a wealthy retired tradesman, one proof as to his insanity offered was that he wished to become a member of Parliament. I recollect one case of a gentleman who was subject to occasional attacks of insanity, where his friends declared that they always had warning of the approach of the attack from the conscientious manner in which he talked about the discharge of the duties of his office, which, when in the full enjoyment of his faculties, he was thought to have neglected. Of course, in this case it was the extreme nervous susceptibility which manifested itself on the approach of a paroxysm.

With regard to the evidence afforded by premonitory symptoms, the obtaining of this appears to me mainly to depend, not on the conduct of the person afflicted, but on the acuteness, and observation, and discretion of those about him. In some instances, these symptoms have been very obvious and very frequent, but have passed unnoticed. In other cases, the first appearance of the disorder, however slight, has attracted notice.

As to how far the commission of suicide may be regarded as

* *Phædrus*, p. 107.

a proof of the existence of insanity in the party committing it, this must of course depend on the circumstances of each particular act. When it has been shown that from the peculiarities of his case, as from acute bodily suffering, or the certainty of approaching ruin and disgrace, life had become a burden, it cannot be assumed that suicide is any proof of insanity. Thus, in the recent case of Mr. Watson, suicide appears to have been attempted in order to excuse the disgrace of being punished as a murderer. Where suicide is proved to have been committed without any adequate motive, and more especially where symptoms of insanity had been observed in the person who afterwards destroyed himself, it may be regarded as a satisfactory proof of unsoundness of mind. Coroners' juries are nevertheless, it is well known, generally disposed to take a charitable view of suicide wherever an opportunity or an excuse is afforded for doing so, out of a humane regard for the feelings of the relatives of the deceased, and return a verdict to the effect that the deceased fell by his own hand while in a state of unsound mind, instead of a verdict of *felo de se*.

The sudden outburst of ungovernable fury, especially after a fit of melancholy depression, as in Mr. Watson's case, is a common feature in, and a strong proof of, insanity. But then, as did not happen in Mr. Watson's case, the fury has been unprovoked, without motive, and without deliberation. As also happened in Mr. Watson's case, this fury has also been vented on those who were most nearly connected with the lunatic. A wife and children, towards whom, when not suffering from mental disease, the insane persons appear to have been very warmly attached, have frequently fallen the first victims to his unprovoked and sudden rage.

Malice against unknown persons, and a general desire to take away life, without any motive for doing so, as in Miss Edmunds' case, might almost be regarded in itself as a proof of disordered mind, if not of actual insanity. The whole nature of woman seemed in this instance to be reversed. And there was the strong corroborative evidence of insanity in her case that several of her relations had been afflicted by the same disease.

According to the opinion of the celebrated John Hunter, as given upon Donellan's trial, there is no such thing as hereditary disease, but there is an hereditary disposition to it. In the case of insanity, for instance, it would appear that although the disease itself is not inherited directly from the parent, yet the frame itself, whether from texture, temperament, formation, or organisation, peculiarly liable to this disease, is so inherited.

During the trial of Mr. Watson, the law, as laid down by the judges, was very clearly expounded by Mr. Baron Martin, who

told the jury that the only question which they had to determine was, "Did the prisoner at the time he committed this act know what he was doing? If not, of course he was not criminally responsible. Did he also know that he was doing wrong?"

It may, perhaps, be thought by some persons who have paid deep attention to the subject, that the principle here expressed by the learned judge who tried the case, and which was laid down by the judges, after deliberation, in the House of Lords, is hardly sufficiently comprehensive to meet all the cases of insanity which have to be dealt with, more especially acts committed from ungovernable, morbid impulse, or which are the result of delusion. I venture, therefore, to submit to your consideration that exemption from moral responsibility, and consequently from criminal punishment, should exist in each of the following cases:

1. Where the person committing the act is suffering from loss of reason, evidence of which is afforded by the nature of his acts, both in regard to the particular offence with which he is charged, and also his general conduct, so that he must be presumed not to know right from wrong, or that he was committing an act which was unlawful. Exemption in this case is clearly comprehended in the rule down by the judges.

2. Where a person is labouring under delusion with regard to particular topics to such an extent that his conduct on many matters is not only influenced but determined by this belief, although he still continues to reason correctly, it appears that he should be considered exempt from moral responsibility, and also from criminal jurisdiction. In this case, although his reason may be unimpaired, the ideas on which he forms his reasoning data are false; or, his imagination being disordered, and acquiring undue influence, leads him astray. For instance, the law allows of killing a man in self-defence, when your life is attempted. Suppose a person labouring under the delusion that a man is attempting to kill him, kills the man, as he believes, in self-defence. Is he exempt from moral responsibility in such a case, or ought he to be executed as a murderer? I was once witness to an attempted murder by a lunatic of a man who he believed was intending to kill him, and yet that lunatic talked and reasoned very soundly on all topics, not excepting those connected with his delusion. Would such a case as this come within the principle laid down by the judges? On the one hand, the existence of a delusion might be urged to be an indirect proof of the absence of reason; but which, on the other hand, might be directly answered by shewing the exercise of reason in regard even to the very delusion itself.

3. Where a person is under the influence of a morbid impulse, by which, for the time, he is irresistibly carried away, owing to the weakness of his mind through disease, and in consequence of which he loses the due control over his actions, although he may be quite conscious that he is acting wrongfully, he should also be deemed to be exempt from moral responsibility, and should be free from punishment as a criminal.

4. Where, from mental disease, more especially that connected with, or arising from, the disorder of the nervous system, a person is afflicted with violent and uncontrollable irritability, which induces to acts of frenzy, although he may be at the time actually conscious that he is doing wrong, he cannot be deemed to be morally responsible for his acts, and ought not to be punished for them as a criminal.

DISCUSSION.

Mr. LEWIS, referring to the conclusions drawn in Mr. Harris's able paper, said that it was his impression that the interests of society would be best served by the extinction of both dangerous lunatics and habitual criminals, not in a cruel manner or in revenge, but for the protection of society, just as one would destroy dangerous wild beasts. The lives of these unhappy beings were a curse both to themselves and everyone else; but it appeared to him that the present tendency of legislation was to protect and preserve all the useless and worthless members of the human race at the expense of those who were worthy and useful.

Mr. BRABROOK remarked that the practical question frequently was not so much the irresponsibility of the criminal as the responsibility of those in whose hands his life was placed. There was a certain morbid shirking from this responsibility which had increased very much of late years. He could not avoid referring, in evidence of this, to the recent instance in which, when public servants had not shrunk from this responsibility, but had preferred what they considered their duty to the State to the dictates of mere humanitarianism, they had been censured and punished. With regard to the question of criminal lunacy, he was of opinion that the final decision in these cases should rest, not with a Parliamentary official, such as the Home Secretary, nor with any single person, but with some wholly independent body of a judicial character.

Dr. CHALNOCK said it was difficult to prove when sanity merged into insanity; the space between might be small indeed. He thought if a man were proved to be of unsound mind just before, or just after, the perpetration of a crime, he ought not to be held responsible. According to some writers, persons ought to be held responsible during a lucid interval; but that when the interval is only of short duration it must be looked upon with suspicion, as the insane person may have been under the influence of cerebral irritation. According to some, the proper test is whether a person is able to know

right from wrong. On the other hand, medical men assert that those labouring under confirmed insanity, and who have been confined for years, are proved to be quite conscious of the difference between right and wrong. But it might be asked, how is it possible to ascertain such a fact except from the insane person himself; and even during a lucid interval such evidence would be unsatisfactory.

Mr. HOLTHOUSE was surprised to hear the doctrine advanced—that criminal lunatics should be hanged instead of being confined for life, and chiefly on the ground of economy. In all civilised countries punishment is inflicted rather for the repression of crime in others than for avenging the crime on the offender. The criminal acts of these individuals originate in disease of the higher parts of the cerebral structure—the convolutions—and for this disease they are not responsible; if it be right, therefore, to take away life under such circumstances, it would be equally so to poison or make away with any one who was suffering from an incurable disease—to put him out of his misery, and so relieve his relatives and friends from the expense and trouble of maintaining him. There was another point on which he differed from the last speaker, viz., his sanction of the definition which has been given of insanity, as a want of knowledge of right and wrong. No doubt there are insane people who have not that knowledge; but it is quite certain that many have, and their insanity consists, not in a want of knowledge, but of the power to restrain their morbid impulse, as is seen in many forms of monomania—dipsomania, for example, where the will is too weak to resist the irresistible craving. One more remark. The author of the paper, if he (Mr. Holthouse) understood him correctly, spoke of two kinds of madness—insanity and idiocy—but it appeared to him that the latter could not properly be termed insanity, as it arose from a defective development of the brain, and not from actual disease; whereas the latter was truly disease affecting a brain which, as regards its development, might be normal.

The meeting then separated.

JUNE 3RD, 1872.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

The following New Members were announced: C. MITCHELL GRANT, Esq., F.R.G.S., 29, Belsize Park Gardens; Captain FRANCIS LUKIS, Grange, Guernsey; R. F. ST. ANDREW ST. JOHN, Esq., Park Road, Red Hill.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

FOR THE LIBRARY.

From the INSTITUTION.—Journal of the Royal Institution of Cornwall, No. 13, April, 1872.

From the AUTHOR.—Note on M. Blade's work, *L'Origine des Basques*, by W. Webster.

From the CLUB.—Proceedings of the Berwickshire Naturalists' Club, 1871.

From the SOCIETY.—Proceedings of the Royal Society, vol. xx, No. 134.

From the EDITOR.—*Nature* (to date).

From the AUTHOR.—*Sur la Déformation Toulousaine du Crâne*, by Dr. P. Broca.

From the INSTITUTION.—Journal of the Royal United Service Institution, No. 66, 1870.

From the EDITOR.—*La Revue Scientifique*, No. 48.

The following paper was read by the author :

On the ARTIFICIAL ENLARGEMENT of the EARLOBE. By J. PARK HARRISON, M.A.

THE ancient custom of enlarging the lobe of the ear, either for the purpose of forming a loop, as seen in the images of Buddha in India and other eastern countries, or, which appears to have been the original object, to render it capable of receiving discs, or ear-plugs, of larger dimensions and greater weight than the lobe in its natural state would be able to carry, has not received the attention which the subject seems to demand, whether viewed simply as an anthropological fact, or as it may afford evidence of intercourse between distant countries in prehistoric times.

It appeared desirable, therefore, to collect information on the point from museums and books of travel, both old and new, and lay the results before the Institute, even though the catalogue of localities where traces of so singular a custom have been found may at present be incomplete.

From the circumstance that my attention was especially called in 1869 to the practice of enlarging the earlobe in Easter Island, where it appears to have been for ages in operation, I propose to give, first, some particulars from the narratives of Roggewien, Cook, and other navigators; and next, taking India as the country where the custom has been known to have longest flourished, follow it through other lands in geographical order.

Easter Island.—When the Dutch arrived at Easter Island in

the spring of 1722, whilst still two miles from the shore, a native went off to them alone in a canoe. "His ears were excessively large and long, so that they hung down upon his shoulders"; and it is specially worth notice that on the morning after their arrival the people were seen prostrating themselves towards the rising sun, near some gigantic statues, which had also elongated ears and cylindrical caps on their heads. Amongst the crowd there was a native "perfectly white" (perhaps from contrast), "in whose ears were pendants as big as one's fist". Judging from their behaviour and dress, the Dutch came to the conclusion that some of the islanders were priests; their heads were shaved, and they had "white balls in their ears, and wore hats made of black and white feathers."*

Fifty years later, Captain Cook describes the ears of the islanders as "pierced with large holes, through which four or five fingers might be thrust with ease"; and he noticed that some natives "turned the lobes over the upper part of the ear to keep them out of the way." The portrait of an Easter Island woman with pendent earlobes, drawn from nature, and engraved in Cook's Voyages, is reduced in Plate x, fig. 8.

The chief ear-ornament in the island was "the white down of the feathers of (sea) birds; but rings were also used inside the lobes formed of some elastic material rolled up like a spring." This, Captain Cook thought, was for the purpose of keeping the holes "at their utmost distension."†

Captain Beechy, writing in 1825, says: "Both sexes still retain the hideous practice of perforating the lobes of the ears, though the custom is not so general with the men as formerly. The aperture, when distended, which is done by a leaf rolled up and forced through it, is about an inch and a quarter in diameter. The lobe, deprived of its ear-ring, hangs dangling against the neck."

When the *Topaze* visited the island in 1868, the officers found that the practice of enlarging the lobe had almost died out, perhaps in consequence of more frequent intercourse with a superior race; or from the fact that the chiefs' families, who principally affected it (here as elsewhere), had been deported by the Peruvians, and no longer led the fashion. The ears of all but the older natives were at this date without slits.‡

A sketch of the head of one of the curious anatomical wooden

* Account of Roggewien's voyages in Bowen's Geography, vol. ii, p. 777.

† Lieut. M. J. Harrison noticed some strips of turtle-shell in 1868, which may have been intended for the above purpose, but not used.

‡ Two of the gigantic statues were brought to England in the *Topaze*, and are in the British Museum. They have slits in the earlobes—a fact which Mr. Bollaert was unaware of when he wrote the "Antiquarian Researches". See his note on p. 202.

images which were kept in former times with religious care in their houses by the natives, is shown in Plate x, fig. 9. This image, with other relics, was obtained by Lieutenant Harrison in 1869. In addition to the peculiarity of the enlarged earlobes, there is on the crown of the head what appears to be the representation of a sun god (also with elongated ears), either tattooed on the scalp, or cut out like a pile pattern from the hair. Some shark's vertebrae, used as ear-discs, were brought home at the same time (Plate xi, fig. 5).

Amongst other interesting particulars which may assist by and bye in determining the origin of the Easter Islanders, Commodore Powell learnt from the French missionaries, who had been five or six years in the island and acquired the native language, that they have a distinct tradition that the fabricators of the stone statues with the elongated ears arrived ages ago in a boat from the west. It appears, also, that drift wood is deposited on Easter Island by a current caused by westerly winds which blow in that latitude for six months in the year in a direction contrary to the Trades.

India and Ceylon.—It has already been mentioned that the images of Buddha have long flapping ears (see Plate x, fig. 1). He usually sits cross-legged, either with a pointed cap with a knob, or cross near the top, or else with a curled wig and top-knot. In the India Museum there is a standing figure of the saint, with the characteristic ears, perforated but without earrings. In each hand he holds a circular ornament, which it is scarcely a stretch of fancy to imagine may represent the ear-discs which he discarded when adopting an ascetic life; they are like the ear ornaments elsewhere in use in India.

In Ceylon, three hundred years ago, the people were said by early travellers to make "wide lobes in their ears", which "were stretched out with the weight of their jewels to the shoulders". This probably referred principally to the ears of the chiefs.

Both in Ceylon and on the opposite continent, as far north as Malabar on the west, and Madura to the east, the custom of enlarging the lobe still exists in spite of European intercourse. But the practice appears to be confined to one or two tribes.

Captain Hamilton, writing a hundred and fifty years ago, speaks more especially of the Naizos, or nobles, of Malabar, as affecting long ears. And the natives of Cochin, according to Fitch, had ears as large as those of Ceylon. In the district of Madura, Dr. Shortt mentions that amongst the Marawars, who form the greater part of the population, the practice of piercing the ear lobes, and "so distending them as to touch the shoulders", is still kept up amongst the women. The operation is here, as in other countries where the custom prevails, carried out during infancy, and the

aperture in the earlobe is very gradually enlarged. Salt and water is applied during the first day or two; and at the end of a month weights, each slightly heavier than the last, are attached to the lobe until it is brought to the requisite length.*

Though ear ornaments of considerable size are common in other parts of India, I have not been able to learn that the lobe of the ear is now distorted in the manner above described, in any other districts except Madura, Malabar, and Ceylon.

Many of the Indian idols, however, have elongated ears; in some cases profusely decorated with jewels. In the India Museum there is a group of three, the centre figure of which is shown in Plate ii, fig. 4. It has discs in the ears, and also a circular ornament in front of the cap. On the right of the image there is a similar figure, only smaller; and on its left a female Divinity, with large hoop ear-rings with drops attached.

One of the earliest fragments of sculpture in India has a disc of considerable size in the lobe of the right ear, whilst the left is decorated with pearls or jewels (see Plate x, fig. 2). It is part of a frieze of an ancient temple at Bhitari, near Benares, and represents the Indian Bacchus, or the sun, in *alto relievo*. The temple itself has been for many centuries in ruins, and until lately buried beneath a mound of rubbish. Several female figures sit on either side, and are said to symbolise the planets. The whole composition is singularly enough styled "Novgraha," or the Nine Planets.

It is thought by Indian antiquaries that the Temple of Bhitari was both of Buddhist and Hindu construction, being alternately held by Buddhist and Hindu kings during the Gupta period (A.D. 100-300), who both embellished it.†

Without stopping to inquire what may be intended by the peculiar treatment of the ears of the sun in the above sculpture, it will be sufficient to point out that the artificial enlargement of the lobe appears originally to have been adopted in India for the purpose of receiving a solar disc; and that the Ceylon Buddha, when he renounced idolatry, removed the emblem from his ear-lobes, which necessarily hung down in consequence in the manner shown in his images. It is quite conceivable that his followers also would, for a time at least, have affected the same peculiarity.

Assam, Aracan, Birmah, and Laos.—Ovington, early in the last century, noticed holes in the ears of the natives of Assam "wide enough to put a thumb in". This dimension accords with an uncommon form of ear-stud from Assam in the Christy

* See a full and interesting account of the operation by Dr. Shortt in the "Memoirs of the Anthropological Society", vol. ii, p. 236.

† "Asiatic Journal of Bengal", vol. xxxiv, p. 84.

Museum (see Plate xi, fig. 6). It is formed of grass or rushes plaited, the plug being of a diameter suited to a hole of the size noticed by Ovington. It is ornamented with a semicircular nimbus of coloured bristles, red, white, and black, the effect of which is suggestive of the rays of an Eastern sunset.

The same traveller found that the inhabitants of Aracan "caused their ears to hang as low as their shoulders." There is a lacquered ear-disc in the Museum of the Institute which probably comes from this neighbourhood (Plate xi, fig. 1). Mr. St. Andrew St. John noticed that the women of the hill country north of Aracan still introduce large plugs into the lobes of their ears. The chiefs wear quoit-like ornaments suspended from them.

Ear-tubes of amber of a considerable size are used in the country north of Birmah; some of them are hollow and others solid. There are several specimens in the India Museum (see Plate xi, fig. 4).

An idol from Birmah in the Christy Museum, which has a pyramidal crown ornamented with six tiers of rays, is apparently the representation of a solar deity. It has large plugs in the lobes of the ears (Plate x, fig. 3). In the India Museum there is a large ear-stud of ebony nearly two inches in diameter. It is from Pegu (Plate xi, fig. 7).

Captain Hamilton mentions that in Laos "the king's ears, by being first bored in his infancy in the fleshy part, were so distended by repeated borings that they reached down to his shoulders". This, he adds, was "characteristic of his preeminence above his subjects", who likewise bored their ears, but "did not stretch them to such a dimension". He wrote about a hundred and fifty years ago. The ears of the people of Siam and Ava are also described by early travellers as "lengthened by art".

The Asiatic Islands.—Three wooden images from the Isle of Nias, near Sumatra, in the Ethnological Room at the British Museum, are remarkable in having the right ear elongated, whilst the left remains in its natural state. One of these, about three feet high, is carved out of wood which has either been stained a jet black, or has become so from age. It sits on its haunches. The head-dress looks like an attempt to imitate the Egyptian crown; and it has a small pointed beard beneath the chin. The two smaller figures in the same case strike one as copies of older work. Unlike the Bhitari sculpture, a heart-shaped ornament or locket is in each case suspended from the elongated ear-lobe, and not inserted in it. Both figures have a short stump or tuft on the chin. These images appear to me to represent the sun (Plate x, fig. 4). A wooden sword-sheath,

also from the Isle of Nias, is ornamented with three figures with large beards growing from beneath their chins. The earlobes are all enlarged, and appear to have contained, or to have been intended for, discs or plugs. This and other interesting relics from the same island are in the Christy Museum.

In the Christy Museum there is also a wooden figure from the Island of Nicobar, near Malacca. It is above the height of a man, but not ill-proportioned. The lobes of the ears are considerably enlarged, and there are circular holes in them, which appear to be intended for discs or ear-plugs. There is a notch in the chin which seems to indicate that there was once a beard (see Plate x, fig. 5).

A metal disc, backed with wood, intended for insertion in the lobe of the ear, in the same Museum (Plate xi, fig. 2), is from the Isle of Borneo. It is about an inch and a half in diameter. Mr. McDougall, in his letters from Sarawak, relates that there is a tribe in the interior who "dress like the Dyacs, but instead of a number of small rings (which the latter wear) in their ears, the lobe is itself stretched into a ring, so as in many cases to reach to the shoulder. To this the women hang brass or tin ornaments."* It was in this region that Pigafetta, who sailed with Magellan in 1519,† heard from an old pilot that there was an island where there was a race of diminutive stature with ears as long as their bodies, so that they lay on one ear and used the other for a covering. They were said to be Troglodytes. A similar story is told by Strabo on the authority of Megasthenes; and if "the Isles of the Scythians" mentioned by Pliny, where it was reported there were natives with ears of the same dimensions, and said to have been applied to the same use, are the islands alluded to by Strabo, and could be placed in the Indian Archipelago, it would afford additional evidence that that region was known, at least by report, to the ancients.‡

South Pacific.—A native of Admiralty Island is represented in Dumont D'Urville's work with long loops to his ears; and in the Soloman Islands, early voyagers found not only greatly enlarged earlobes, but enormous discs in use for distending them. There is one of hardwood, inlaid with pearl shell, quite three inches in diameter, in the Christy Museum (see Plate xi, fig. 3); and I have seen others from the Island of Christovet of a similar description in Sir Henry Denham's collection. An image from the Soloman Islands in the Christy Museum has distended earlobes (Plate x, fig. 6).

* P. 117.

† Pinkerton's Voyage, xi, p. 375.

‡ The author of a curious book called "Anthropometamorphosis", which was brought to my notice by Dr. Carter Blake, mentions this amongst other fabulous stories. Some accounts, however, of long ears are given, which agree with the relations of modern travellers.

Elongated ears are also found amongst the Vatese—the inhabitants of one of the New Hebrides. The lobes are described in Murray's "Polynesia" as filled with circular pieces of stone, and large ornaments of white shell hanging from them, so as often to extend the orifice to a great size.* Long loops are shown in the ears of a native of New Caledonia in Dumont d'Urville's work (Plate x, fig. 7).

In the Pelew Islands it is, or was until recently, the custom for the men to have *one ear* perforated, whilst the women's ears were both pierced. The ear-ornaments are described as beads, tortoise-shell, and leaves.

Enlarged earlobes are found in the Navigators, Fiji, and Friendly Islands. Speaking of Samoa, the late Mr. Prichard says, "it is noteworthy that whilst both the dark and fair-skinned islanders enlarge the lobes, the holes are always larger amongst the former."† In Penrhyn Island, however, where the inhabitants are exceptionally fair, the custom of enlarging the earlobe also prevails—more especially amongst the chiefs.

In Mangaia, one of the Society group, Cook relates that the natives had such large slits in the lobes of their ears that they were sometimes used as a receptacle for various implements and weapons. Between Mangaia and Easter Island lies Oparo, or little Rapa Isle, from which the native name of Easter Island—Rapa nui—is traditionally derived; and from thence to Peru is an unbroken expanse of ocean two thousand miles in extent.

America.—The practice of enlarging the ears of persons of high rank was found in existence amongst the Peruvians at the time of the Spanish Conquest. The fact is so well known, that I will merely direct attention to a reduced sketch of the terra-cotta head (Plate xi, fig. 1), referred to in Mr. Bollaert's "Antiquarian Researches." It represents the head of a chief, with the lobes of the ears "enlarged by the insertion of a wheel of gold or some other material."[‡] The early Spanish historians mention that an elaborate religious ceremony took place in the temple of the Sun at Cuzco, on the occasion of boring the ears of the young Peruvian nobles. In the case of the royal princes, the Inca himself pierced their earlobes with a golden pin.

A mask in the Christy Museum, from Palenque, in Central America, shows that there also the lobe was enlarged for the purpose of holding solid circular ornaments. The mask is about nine inches wide, and the cylinders in the ears two inches in diameter by two inches long (Plate xi, fig. 2). In the same museum there are some plain discs of wood, some solid, and

* "Polynesia", p. 225.

† "Fiji and the Fijians", p. 428.

‡ The sketch is taken from a photograph. The head is a *vase*, and the ornament at the top of the head-dress appears to be formed of string or sinnet.

others with a circular aperture in the centre, about two inches in diameter, from the country of the Caranje and Apinaje Indians, in Brazil. The custom of enlarging the earlobe in this country appears to have been confined to a very few tribes.

The Paraguayans were described by Father Sepp in the earlier part of last century as having "large holes bored in their ears, and under their under-lips, like some of the Brazilians."* In Mexico, though discs seem, from the illuminations, to have been inserted in the earlobes, they do not appear to have been of any considerable size. There is no certain evidence that the practice existed further north.†

Countries to the North-West of India.—Ornamental ear-discs of considerable dimensions were used by the Persians, Etruscans, and Egyptians, but they appear to have been made of thin plates of metal, and to have been fastened to the ear with wire hooks, as in the case of modern earrings. The earlobe was not enlarged, or, if any slight deformity was caused by the weight of the pendants, it was concealed by the ear-ornaments themselves; those in the frescoes styled "musical parties", in the British Museum, cover the lower half of the ear.

Amongst the Etruscans, Egyptians, Greeks, and Hebrews, the use of ear-ornaments was confined to women, except, as it would appear, when the last-named people lapsed for a time into Baal-worship.

Amongst the archaic statuettes from the Mediterranean in the British Museum, there are a few in which one may possibly detect elongated earlobes; as, for example, the figure of the Priestess of the Sun from the Isle of Rhodes (Plate xi, fig. 3). On a careful examination, the loops showing beneath the hair do not appear to be part of the head-dress. There is another priestess in the same Museum, from the Isle of Cyprus, with similar loops.

If one could feel sure that the archaic figure of the Sun from Thebes in Bœotia (Plate xi, fig. 5) has enlarged earlobes, and not suspended ear-discs, it would go far to confirm the impression that the loops in the figures of the priestesses were intended to represent elongated earlobes deprived for some reason of their ornaments. The statuettes are, I believe, supposed to be of about the date 300-600 B.C.‡ There is another figure from Thebes (Plate xi, fig. 6) which is also probably a priestess. She appears to have discs in the lobes of her ears.

* Bowen, vol. ii, p. 540.

† One of the plates in Catlin's great work shows a string of beads suspended from the earlobe of an Indian woman, but it does not appear to distort the member.

‡ Excepting fig. 5, which is of an earlier date, perhaps anterior to the introduction of form in the body of a statue.

Africa.—Early travellers mention that some of the inhabitants of Zanzibar enlarged the earlobe, and it appears to be the custom still in that country amongst the Banians. They are said to have “ornaments studded with precious stones let into their ears—not pendant, but let into the lobes. Those who cannot afford such rich baubles cut a notch in the ear, and gradually extend it, until a piece of wood resembling draughtsmen can be inserted.”* It is added that the Banians are a handsome and superior race, and there is a tradition that their ancestors originally came from the valley of the Tigris.

In the Christy Museum there is a stud for the ear about the size of the ear-disc just described. It comes from the neighbourhood of Natal (see Plate xi, fig. 8). It is worth notice that the Zulus also are said to have migrated from the North.

Origin of the Custom.—In conclusion, I may mention that the Sun is represented with ears in an image of a Solar Divinity, which I have recently seen in the India Museum. They are also found in discs of the sun on the carved rocks at Veraguas. And there is a rude figure of the sun with large ears on a rock at Pommier in South America.†

In a future communication I shall hope to return to the subject, and give further evidence that the practice of enlarging the earlobes was connected with sun-worship. I will now merely add that “ear-rings”, or, at least, ear-ornaments of certain kinds, were very early associated with heathen worship‡—indeed, as far back as we have any records. And discs would have been the most appropriate emblems that sun-worshippers could have made use of.

DISCUSSION.

Sir ARTHUR PHAYRE said: The only countries in which I have had the opportunity of observing people who habitually distended the lobes of their ears, are Burmah and the adjoining hill tracts. The Burmese, who are Buddhists, distend their ears to some extent, but much less than the hill tribes, who are not Buddhists, do. Among the latter I have seen a woman, little above four feet high, with circular bits of elephant's bone, from two to two and a half inches in diameter, thrust into the lobe of the ears. From the ancient Indian sculptures it would appear that the Buddhists distended their ears; but some figures in such sculptures, and apparently those in an inferior position, have not that peculiarity.

Dr. CHARNOCK said an extension of the ear-lobes is also found among the Chinese; according to Southey, among the peoples of Brazil; and, as Adair relates, among the North American Indians.

* “Cruise of the Gorgon”, p. 100.

† Plate to Dr. Seemann's paper, “Mem. Anth. Soc.”, vol. ii, p. 279.

‡ Dr. Smith's Dictionary. Art. Earrings.

3



Figure 3.

2



Figure 2.

1



Figure 1.



Figure 4.



Figure 5.



Figure 6.



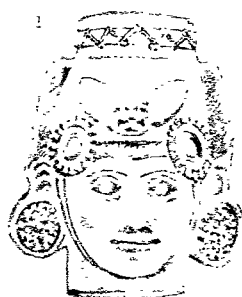
Figure 7.



Figure 8.



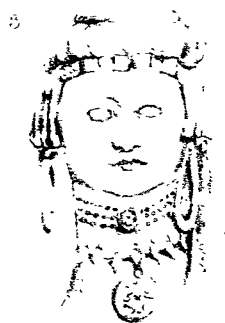
Figure 9.



Papu



Malay



Malay



Malay (No. 2)



Thailand (No. 3)



Thailand (No. 4)



Malay



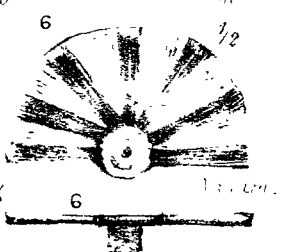
Malay



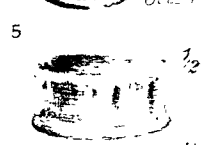
Malay



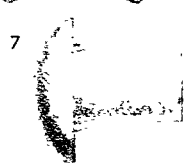
Malay



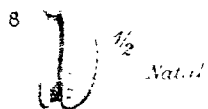
Malay



Malay



Malay



Malay

Ear Discs 1, 2, 3, 4

Ear Studs 5, 6, 7, 8



The PRESIDENT had no doubt that the custom of extending the earlobes was of great antiquity. He doubted whether it had originally any religious signification, although it may have, like so many other ancient customs, gradually acquired a religious character.

The Director read the following paper :

GENERAL DESCRIPTION *of the* GREAT BARROWS *of* KOKOTOWI,
near the VILLAGE *of* ARDASCHEWO, *in* SAPOLIA, RUSSIA. By
NICHOLAS CASIMIR, BARON DE BOGOUSCHEFSKY, Kt., St. VI.
[Abstract.]

BEFORE coming to the tumuli near the village of Ardaschewo, near Sapolia, in the parish of Melëtowo, government and district of Pskov, in Russia, a large plain, overgrown with white moss, covered with hillocks of drift (yellow) sand, and with a few bushes here and there, principally birch, must be traversed; after that the road turns to the west, and passing a small wood of low ashes and birches, a large plateau is reached, descending to the north-east, towards a small rivulet (running below the plateau, and in an almost easterly direction), beyond which the ground rises again gradually, and at about a quarter of a mile's distance are high brown hills, some covered with low brushwood, the rest entirely destitute of vegetation. To the south this plateau descends to a marshy meadow, beyond which is a large wood; to the west a hill rises, and behind it is situated the village of Ardaschewo. In the middle of this plateau, and on the south side of the road from Sapolia to Ardaschewo, facing the rivulet, although at a distance of about two hundred and fifty paces from it, is a cluster of curiously-shaped, low sand hillocks, disposed in a parallelogram (with the side towards the rivulet open). From this central citadel two rows of hillocks, formed of yellow sand and grey ashy earth, overgrown with ferns and miserable grass and a few stunted bushes, run in two directions, the one going almost due south; the other, formed of two, and sometimes of three, rows of hillocks (which, in this instance, are very high, and overgrown with larger trees), leads to the west or south-west by west, towards the village of Ardaschewo, and, after traversing about one hundred yards, terminates in a huge stone altar. The triangle formed by these rows of hillocks is occupied by more recent grave stones set on edge in the form of an oblong and filled inside with earth. To the north—that is, towards the rivulet, and branching off from the same long hillock as the line leading to the stone altar, but beginning at the north end of it instead of the south end, where the other row of tumuli begins—is another line consisting only

of six or seven hillocks. It leads towards the rivulet, but does not reach it by at least eighty yards, and borders the west side of the descent towards the rivulet. On the eastern side of this descent there are also two or three barrows scattered about, serving as a defence of the passage from the castle to the watering-place.

In the middle of the "fork" on the south side of the road is a high and very broad barrow, the section of which would form an exact semicircle; it dominates over all the other barrows, and, standing on the top of it, a good view of all the camp of tumuli can be obtained. I have had it opened, and, after digging about three feet below the ground level—*i.e.*, about eighteen feet down from the top of the tumulus—three pots of unbaked clay were discovered, one of them filled with broken and carbonised human bones together with some charcoal and fragments of the "turpentine pine" (*soosnavig penn* in Russian), from which the peasants make tar, and a few stones surrounding these pots. Although the ground was opened much lower down, nothing else could be discovered.

Near to another barrow, only six inches below the surface, a stone implement, of which I cannot divine the use, was discovered by accident. In the openings at three feet below the top of the barrow, fragments of unbaked clay pottery (the clay being mixed with small quartz pebbles, broken up and mixed carefully with the clay) have been discovered.

In another barrow I discovered below the surface of the ground a few teeth, said to be those of a walrus.

When some of the more modern graves were opened, in two of them fragments of pottery were found, also of apparently unbaked clay, and in another a large iron nail. In all the others nothing but bones, which almost invariably crumbled down when exposed to the air, placed in a curious position—namely, not in the same line as the stones are arranged, but somewhat crosswise, so that the lines formed by the body and by the stones made a St. Andrew's Cross. I do not think these tumuli were intended for burial, but that some of them were the foundations of houses or temples. The country and woods for miles around are covered with clusters of barrows all apparently branching from this great central fortress.

The peasants in this country who have been asked for their opinion as to the origin of these tumuli say that they had a tradition that they were constructed by "Litwa Paganaya", or heathen Lithuanians, as fortresses, etc., "during the war"; but that can hardly be, because the earliest time when the Lithuanians began to invade Russia is *circa* 1200, and at that period they made use of iron weapons, and

not stone ones, and had certainly no vessels of unbaked clay; and those discovered in the tumuli are of unbaked clay and stone. Besides, one look on these low, weather-beaten hillocks (in which roots of immense trees have been found in a state of decomposition) would suffice to impress upon the beholder an idea of their great antiquity, certainly prior to the thirteenth century.

About six versts distant from these tumuli there is a rivulet near the village of Taletz (Wells), and on the shores of this rivulet is a large flat stone on which is engraved, in deep lines, a horseshoe, or rather hoof, the point of which is directed to the north. Of what epoch this is the monument there is little doubt, because our great historian, Nicolas Karamsin, says in his "History of the Empire of Russia" (preface to vol. i, ed. 1838): "The only monuments which we have of the arts of the ancient Slavonians of the Roman period—*i.e.* from A.D. 1 to 500—are large slabs of granite lying on the shores of rivers and water-currents, and having roughly-engraved representations of horses' hoofs, arrow-heads, birds, &c., on them. These must have served as altars, &c., on which sacrifices were offered to the 'Russalki,' 'Wadianay Dieduschka,' and other water deities." The stone is now in my small museum of Slavonic antiquities at Sapolia. This I consider as a proof that in general the antiquities of this neighbourhood are of a great age, and belong to very remote periods of pre-historic "history."

The following paper was read by the author.

ON OGHAM PILLAR STONES *in* IRELAND. By HODDER M.
WESTROPP.

A CLASS of pillar stones bearing strokes or scorings, said to be inscriptions, are met with in different parts of Ireland. They are found in considerable numbers in the south and south-western counties, and have excited much attention among Irish archaeologists. The scorings on these pillar stones are in their unanimous opinion ancient alphabetic characters, and are called "Ogham," a term which has been defined "the occult manner of writing in use amongst the ancient Gaedhel". An alphabet of these characters, said to be taken from an old Irish MS., has been put forward, and the so-called inscriptions on these pillar stones read and interpreted according to it. The so-called letters of this alphabet consist of mere straight strokes or scorings, arranged in groups along a line, which is generally on the edge of the stone, and which has been termed the "fleadg," or stem-line. The

stones are for the most part rude, undressed monoliths, from four feet to fifteen feet in height. The inscription is said to commence towards the bottom of the stone, and run upwards to the top. Short lines or notches are said to stand for the vowels *a o u e i*: one notch denoting *a*; two, *o*; three, *u*; and so on. Lines on the left of the base line stand for *b, l, f, s*, and *n*, according as they are 1, 2, 3, 4, or 5 in number; lines on the right of the base line stand in the same manner for *h, d, t, c*, and *g*; while those crossing the line diagonally denote *g, ng, st* or *z*, and *r*.

These pillar stones are said to be sepulchral or commemorative. Almost all the Ogham inscriptions have been read as mere patronymics, containing the name of the person in whose honour the stone was erected. Thus the stone at St. Olan's Well is read, NOMAQIDEGO, No, (the son of Dego). On a stone found in Kerry, NOCATI . MAQI . MAQI . RET, the stone of Nocat (the son of Macreith).

At the risk of appearing a heretic among Irish archaeologists, I would venture to put forward a very different view.

The view which I would propose is this, that the so-called Ogham inscriptions on these pillar stones are in reality the scorings of the number of cattle possessed by the owner of the land in which the pillar stones are found, under the old Brehon or pastoral system in Ireland.

Under this system the common land was divided into common pasture land, common tillage land, private demesne land, and demesne land of the tribe; each man of the tribe had a right to pasture as many cattle as he possessed on the common grazing land; and in proportion to the *number of cattle* thus pastured by each was the share of the common tillage land assigned to him upon the annual partition. The land was thus an appurtenance of the stock; so that to say of a person under this system that he possessed a hundred cows, implied not only that his herds amounted to so many head of cattle, but that in addition, and as a necessary appurtenance of his estate in them, he also possessed the grazing of a hundred cows, and the share proportioned to a hundred cows in the common tillage lands of his tribe.

Now, I think it may be considered as a very rational inference from this, that these pillar stones were set up by the owners of the land to record the number of cattle they possessed, and consequently the share of land they were entitled to upon the annual partition, and that the so-called Ogham inscriptions are thus only the scorings of the number of cattle in the pasture land where the pillar stones are found set up. What lends a strong countenance to this view is the diagram which accompanies the Ogham or scorings on the Kinard pillar stone, which obviously represents a square ground-plot subdivided.

A custom somewhat similar to what I attribute to the early Irish has been remarkably developed among the ancient Ditmarshers, the inhabitants of a tract between the mouths of the Elbe and Weser, on the western coast of the province of Schleswig. It is said to have arisen out of the system of apportioning lands in the common-fields annually by lot, and of the necessity of marking the portions which fell to each person. A late writer on this subject informs us that the mode of division by lot in the north of Europe was as follows: runes were cut on small pieces of wood, each owner of a hide of land choosing his own. These were put into an apron, "the lap," or bag, and drawn in succession, and after the drawing a corresponding *signum*, or mark, was cut on a small piece of wood about six inches long, and driven into one of the divisions of the ground, symbolising the possession by the *hasta*. A similar mode was used in England for the common meadows, except that the mark was cut out in the turf itself. Professor Michelsen traces these marks to a prehistoric period.

This view, I may say, is a more rational solution than the absurd interpretations given by Irish archaeologists of the present day. With them a series of letters is first made out, according to a certain alphabet of very doubtful authority; these letters are then divided and made into Latin or Irish words, according to the whim of the interpreter. Thus MARIANI is with one, Magh Riani, the field of Rian or Ruan; with another, Mariani, the genitive of the Latin Marianus. In some cases most different versions are given of the same inscriptions; other Oghams yield such unintelligible jargon as QRAGUISMU. QUITALEGI. QUITUMAH. The names, too, such as Coribiri, Mucotoi, Calliti, etc., as read by the interpreters of these so-called inscriptions belong to no Celtic type, or as the interpreters complacently say, the names are strange to our Gaedhelic nomenclature. The absurdity of the readings becomes more obvious when we find the word "Maqi," as given by the interpreters, sometimes made a nominative case, other times a genitive case, sometimes read as "son of," "son," and frequently as "Mac."

These pillar stones bearing inscriptions are frequently found used in covering stones of the underground chambers of raths. They must, therefore, belong to a much earlier period; in every probability to the stone age. Now, there is no proof of any alphabet being ever known to a people in that early stage of civilisation, not even to a people of the bronze age. Another strong presumption against these scorings representing an alphabet arises from Sir John Lubbock's observation in regard to the Oghams, that the origin of letters was due to a kind of picture-writing, to which the Ogham scorings cannot suggest a similar

origin. Further, it has not been generally observed that these strokes or scorings on the same stone evidently belong to a different periods, and are cut on the stone in different ways. They cannot be sepulchral inscriptions, as these pillar stones are never found in connection with sepulchral remains. They are found singly, standing in the open field, in deep glens, on the side of the mountain, and on the lonely moorland. Some on headlands overhanging the sea, as at Dunmore, and Brandon Head in Kerry, and Hook Point, Waterford.

These considerations lead me to strongly doubt of these inscriptions being in alphabetical characters. In every probability these Oghams form a system of notation, such as would be suggested to a people in an early stage of civilisation.

The most natural method of notation was to signify "unity" by one stroke; two, by two strokes; three, by three strokes, etc. And as far as we know, this was the method adopted by most of those nations who invented systems of notation for themselves. It is found among the ancient Egyptians and Assyrians. It is shown in the earliest Latin and Greek records, and is the basis of the Roman, Chinese, and other systems.

Among the Romans the following seems to be the most probable theory of its development. A simple series of strokes was the basis of the system, but the labour of writing and reading large numbers in this way would soon suggest methods of abbreviation. The first and most natural step was the division of the strokes into parcels of ten, a plan which produced great facility in the reading of numbers. The next step was to discard these parcels of ten strokes each, retaining only the two cross strokes; thus \times is the symbol for ten.

The Ogham, which presents a strong analogy to these systems, obviously represents a similar system of notation, and was in all probability invented independently by the ancient Irish.

An examination of the Egyptian, Assyrian, and Roman systems of notation will show the similarity of these early systems to the Ogham.

A somewhat similar system of notation is still retained in Ireland at the present day. Pilgrims at Gougán Barra, near Cork, are in the habit of scoring the number of paters and aves said by them in groups of fives, on sticks or twigs, which are then left on the island in the centre of the lake.

This mode of notation was probably also used by the ancient Irish, and the Ogham system derived from it.

The suggested derivation of the word "Ogham," from "ogan," a stick or twig, would seem to lend some countenance to this view.

DISCUSSION.

Mr. MOGGRIDGE said : May I be allowed to say a few words, since I come from South Wales, where several stones with the Ogham characters have been found. The facility with which these markings are read off by those who have made them their study has surprised me ; but, while I do not mean to vouch for the accuracy of those readings, in some cases they certainly agree marvellously well with local tradition. My chief reason, however, for rising, is to suggest a slight emendation in the ingenious theory that Mr. Westropp has enunciated. His idea is that these markings indicated the number of cattle that some person might turn upon the common ; such a record on stone would last for ever—the individual soon pass away. If therefore, there be any truth in the suggestion, the right so indicated would rather attach to the farm than to the temporary owner.

Mr. BRABROOK regretted the absence of his friends Colonel Lane Fox and Mr. Lewis, both of whom were specially versed in the subject to which the paper referred, and had formed opinions adverse to it. In bringing his views before the Institute, Mr. Westropp had rendered them a service, none the less that those views were novel, and liable to be warmly contested.

Mr. LUKE BURKE and the PRESIDENT also made a few remarks.

The following paper was also read :

The WESTERLY DRIFTING of NOMADES, from the FIFTH to the NINETEENTH CENTURY. By HENRY H. HOWORTH.—PART IX. The FINS and some of their ALLIES.

THE name Finn is nothing more than the English word Fen. The Finns are, in fact, the Fen or Marsh men. The Fenni of Tacitus and the Finnar of the Norse Sagas bear names which simply mark the nature of the habitat of certain tribes, and have no ethnological value. Ssum in Old Russian, Suome, and Samé, the indigenous names of the Lapps and Finns, mean the same thing. Suomi, of which Samé is only a varied pronunciation, is an abbreviation of Suomenmaa, and this again of Suomiehemaa, *i.e.*, the land of the marsh dwellers : from Suo, marsh ; miesgan miehan, man and maaland ("Ruh Finland and its Inhabitants," Stockholm, 1827, ii, 1, quoted by Geiger, *History of Sweden*, 26). Hence the Finns of Finland call themselves Suomalaiset, the Esthonians, Somelassed, and the Lapps, Salmelads (*id.*).

We thus have to deal with an uncertain and ambiguous term, and are apt to mistake the meaning and drift of ancient geographers. Again the name Finn has been applied in modern times to two very different races. Namely, the Finns of Finland, and the Lapps, while many, of whom I am one, hold that it was a name which was anciently almost confined to the Lapps. It

is not yet too late in the day to insist upon the essential distinction there is between the Lapps and Finns. Mr. De Capel Brooke, who lived so long in Lapland, and had many opportunities of judging, says "that at the present day they have scarcely a single trait in common. The general physiognomy of the one is perfectly unlike that of the other, and no one who had ever seen the two would mistake a Finlander for a Laplander. The former are tall of stature, their complexion almost invariably fair, with light, thick, and frequently curly hair; the latter are short, their general complexion considerably darker, and their hair thin, lank, and scanty. The feet and hands of the Laplander, like the Eskimo, are remarkably small and diminutive, which is not the case with the Finlanders. The diseases to which the two races are subject are even different, although living in the same part. They are attacked by different species of intestinal worms, thus the *botryocephalus latus* is peculiar to the Laplanders, while the Finlanders are afflicted by the *tænia solum*, not known to the former. In disposition and habits of life there is also a singular difference, the Finlanders being of a warm, choleric, and quarrelsome temper, while the others are peaceful and inoffensive," etc. (De Capel Brooke, "A Winter in Lapland," 537). I have before me an old work by Simon Lindheim, entitled "*De Diversa Origine Finlandorum et Lapponum*," in which the subject is discussed with great acumen, and the evidence of language specially adduced.

A comparison of the two languages shows how widely the races stand apart. There is a common structure, and a portion of the vocabulary is also common, but the differences also are enormous, and the languages are mutually unintelligible. Geiger says, "If we look at their present condition, a marked diversity appears. The Finns still refuse to acknowledge their consanguinity to the Laplanders. The latter think it an honour that they can claim kindred with the Finns. Every man who has himself resided among these races in Northern Scandinavia must have received a lively impression of the great difference, both physical and moral, between them. A singular mixture of selfishness, mistrust, and childish feeling, characterises the Lapp; a decided and energetic temperament, with a wariness that is often sullen, the Finn. 'The man by his tongue, and the ox by his horn,' says the Finnish proverb. The energy of the Finns applied to cultivation, and clearing the ground by fire, a sort of nomadic agriculture, appears to have been practised by them from very early times. The Lapps of the mountains, on the contrary, are so engrained in their primitive wildness, that, despite the provident spirit of Christianity, and the cares of a paternal government, they offer the spectacle of a

people dying off before cultivation. Yet the process of transition from one state to the other may be observed. The old Quens and Karelians lived in the forests after the fashion of the Lapps, chiefly on the products of the chase, and from this cause *raha*, a skin, is used at present both in the Finnish and Lappic tongue to denote money, the chief representative of value; but more than a century and a half ago the Finns in the interior of East Bothnia and Kajania lived with their reindeer almost after the fashion of Laplanders. Fisher Lapps, as they are called, often of Finnish extraction, are still found in Kemi Lapp-mark (Wahlenberg on Kemi Lapp-mark, 25, cited in Geig., *op. cit.*)

The Lapps are a retreating and diminishing race, the Finns an encroaching one; and there can be no doubt that the latter are a recent accession to the inhabitants of Scandinavia, while the former are the aboriginal inhabitants. The tradition is common to the Lapps of different districts, that they were the aborigines of Norway, Sweden, and Upper Finland.

"In Norway the fixed Lapps who desire to be called Finns, and condemn the Norsemen as well as the wandering Lapps, maintain that they are the true old inhabitants of all Norway (Rask on the Ancient Northern Languages, 114 in Geiger, *op. cit.*). In Sweden there are two traditions, referring, no doubt, to two lines of invasion. They speak partly of an expulsion from Finland (Scheffer. Tornæus)." From Upper Finland they were driven out by the Tavastrians (*i.e.*, Finns) chiefly in times not yet very distant. Some Lapps are still found here. In the "Ancient History of Sweden," 463, No. 4, among the inhabitants of Finnmark, which is the Norwegian name for Lapland, are expressly noted several races of Finns, with Lapps and Karelians. Below Finnmark was Quenland, where the Kajaners or Quens roamed. Among them, too, and in contact with them, Lapps are found, for in an inroad by the former tribe into Norway, these are represented as opposing them, and being defeated. In Sweden proper the Lapp tradition is, that they were driven out, not by the Finns, but by the Swedes. According to their tradition, they maintain that Swede and Lapp were originally brothers. A storm burst. The Swede was frightened, and took shelter under a board, which God made into a house, but the Lapp remained without. Since that time the Swedes dwell in houses, but the Lapps under the bare sky. These traditions are confirmed by the topography of the country. With languages like the Lapp and Finn, we cannot discriminate local names with the same ease that we can where the occupants of a country speak very distinct languages. We are confined in this case to the occurrence of the name Lapp in compounds. This name is of Fin etymology, being derived from Loppu, boundary-

frontier, as Torfæus, Scheffler, and Lehrberg agree, and was applied by the Fins to mark their marches or frontiers. It is a name disliked and disowned by the Lapps, and where it occurs it is evidence of a Finnic population, having met in its invasion with Lappie settlers.

Missionaries from Riga mention a "provincia extrema" named Lappegunda, in the year 1220 (Gruber, Orig. Liv., 148). This was doubtless some part of Finland. In Finland itself there are numerous names of places compounded with Lapp, as Lappinjarwi (Lapp Lake), Lappinsalim, Lapp Bay, Lappinkangas (Lapp Ridge), Lappinluma (Lapp Tower), Lappinranniot (Lapp Cairn), Lappinranta (Lapp Strand, also called Wildman Strand), and in the Swedish parishes, Lapptrask (Lapp Marsh), Lappfiard (Lapp Firth), Lapploik (Lapp Bay), Lappdal (Lapp Dale), etc. From Tavastland upwards their remains and memorials are numerous (Geiger, ii, 8 note). In the eleventh century, Helsingland was still called the main seat of the Skrid Finns (who were Lapps). They roamed over wide tracts of wilderness into the forests of Vermeland, and were probably the same with those Lapps of whom memorials and traces are still to be found in Dalecarlia. For instance, at the cattle-stalls of Finnbo, near Lake Hinsén, in the parishes of Suardisö and Sundborn, there are graves of small size, overgrown with grass, which the inhabitants call Lapp graves.

Aland, with a Swedish population, which, as the graves show, existed in the age of cremation, is full of traces of Lappie and Finnish inhabitants still more ancient; thus the names Lapphole, Koskimpa, Jomala, Finnstrom, Finnby, Finno, Finnbo, Finholm (Geiger, *passim*). We have thus shown reasons for believing that the so-called Finns have displaced the Lapps wherever the former are now found in Scandinavia and Northern Finland; and to justify the conclusion of Geiger and other northern inquirers, that all the Finns proper who have been found in Scandinavia have immigrated from the eastern side of the Gulf of Bothnia. "The Norwegians and Icelanders, from whom the oldest accounts have come to us, became earlier acquainted with the Lapps than with the Finns of Finland, with whom, on the other hand, the old Swedes were oftenest brought in hostile or amicable contact. By the former, therefore, the name of Finns was applied chiefly to the Lapps, and such were the Finns whom they speak of as scattered in the ninth century along the whole frontier between Sweden and Norway. Such, consequently, were also the Skridfinns, whom Adam of Bremen places north-west of the Swedes above the Vermelanders, and therefore in the present Dalecarlia. So, too, the Finns, whose first abode was in the whole frontier forests of West Gothland,

after whom the Finn heaths or wolds of Smaland were already named in the sixth century. Old Sweden had thus its Finn woods like that of modern days. In these the Lapps retained their stations, and the Finns also partially occupied them, until, surrounded and cut off by advancing cultivation, they were either extirpated or blended with the Swedes, of which several later settlements of Finnic immigrants in the forests of Sweden furnish examples" (Geiger, *passim*). I believe the Finns proper entered Scandinavia in the wake of the Norsemen.

We have now brought them into Southern and South-Eastern Finland, and the country bordering the Gulf of Finland on the north. Here they were in proximate relations, if not in contact, with the Esths of Esthonia, with whose linguistic and other idiosyncracies they had the closest connection.

The above conclusions are very generally held by inquirers into the ethnography of the Finns. I wish to extend them somewhat. There are few prejudices more fixed than that which would make the Esths or present inhabitants of Esthonia autochthones. I believe that, like the Finns of Finland, they are a comparatively recent addition to the population of the Baltic borderland. In the time of Tacitus, the Esths were a race who lived near the Vistula, and spoke a tongue which Tacitus calls the Britannic, which, as some suppose, means that they spoke a tongue other than German, perhaps Celtic, or perhaps Slavic. The description he gives of the Esths is entirely opposed to what we know of the Fins. The Esthonia, Livonia, and Courland of our time were then occupied respectively by the Suiones or Suians, the Lemovii called Hellevonii by Pliny, and Liuthiuda by Jomandes, and by the Rugii and Hi ri, who left their name to the Gulf of Riga and the district of Harria respectively, all four races of the Norse type of the Teutonic family, as we shall show in a future paper. So that in the time of Tacitus the area now occupied by the Esths was occupied by a very superior and entirely different race. Again, Tacitus mentions Fenni, east of the Baltic, so do Pliny and others; but his description is that of Lapps, and not of Finns. Listen. *Fennis mira feritas, fedæ paupertas non arma, non equi, non penates, victua herba, restitui pelles, cubile humus sola, in sagittis spes quas inopia ferri ossibus asperant.* Idemque venatus irros pariter ac feminas alit passim enim concitantur, partemque prædæ petunt. Nec aliud infantibus ferarum imbriumque suffugium, quam ut in aliquo ramorum nexu contegantur: huc redeunt juvenes, hoc senum receptaculum, etc., etc.

F. M. Franzen, in his work entitled "*Dissertatio de Berkarlis Abo*," 1789, has proved that the Fenni of Tacitus were Lapps. It is a curious fact in confirmation of this, that the city of

Narva was anciently known as Lappia and its inhabitants as Lapplalot (Schafarik *Slavische Alterthumer*, i, 313). But we may go further. The Finns have a complete vocabulary of terms of husbandry, and such good farmers are they that their ancient dues were paid in corn, when the Swedes paid theirs in butter, etc. They have a native name for butter, also for iron, steel, copper, and silver; they have also their own words for buying and selling, for a village, a circle of villages, etc. These words show that they did not derive their culture from their Norse neighbours. Now, as Dr. Pritchard says, most of these terms are common to the Finns and Esths. It is probable, therefore, that the customs to which they refer existed before the separation of the tribes. This not only strengthens our position that the Fenni of Tacitus were Lapps, but also shows that the Esths were formerly living in close neighbourhood to the Fins, whose ancient habitat we shall presently show was far out to the east. Rahwa is the indigenous name of the Esths; this seems to be connected with Na-rawas, the old inhabitants of the neighbourhood of Narva, who made an attack upon Novgorod in its early days. I believe the Esths to have emigrated from the Ilmen sea, or, as the Russians call it, the Tschudskoi Osero, after Esthonia was deserted by the Norsemen.

In further confirmation of this position, I will quote a fact from Maltebrun, which has been overlooked by English inquirers. In describing Livonia, he says: "Many curious monuments raised before the introduction of Christianity still remain there, but it is not likely that they were built by the Esthonians. Among these are the ancient castles where people met to defend themselves against the Teutonic knights. That of Warbola has been fully described by a Livonian writer. It consists partly of a very large rampart formed of masses of granite laid on one another, without lime or any other kind of cement. Its two entrances bear marks of modern workmanship. The enclosure forms an irregular oval eight hundred paces in circumference, and from two hundred to three hundred in diameter. The thickness of the walls is from thirty to forty feet, and they are higher or lower according to the variation of the ground. It is not far from the sea. Others similar are situated on the Isle of Oesel, but none have been hitherto discovered inland towards Russia, or to the south towards the Letts. It is not improbable that they were the works of the Scandinavians. Swedish and Danish expeditions in heroic ages may have been preceded by other invasions in fabulous times, and Goths might have settled in these parts before they invaded Scandinavia. It is certain from what is known of the Letts, the neighbours and enemies of the Esthonians, that they could not have erected such work. The fortifi-

cations raised by the Letts in the twelfth century were wholly composed of earth, and so ignorant were they of more solid buildings, that they attempted to pull down the castles founded by the Teutonic knights.

We now travel for some distance under the guidance of Castrén ("Ethnologische Vorlesungen ueber die Altaischen Volker"), who, besides his own researches, has collected the results obtained by Sjogren and others on the Ugrians of Russia.

The Biarmians of the Norse writers were a great people, who had a trading mart called Cholmogorod, on the White Sea, and many more scattered over the vast area formerly known as Veliki Perm, or Great Permia, and comprising the greater part of the present Russian governments of Archangel, Vologda, Viatka, etc. This vast area is still occupied by a thinly-scattered population of fishermen and hunters of a rude and barbarous type, who are known as Sirianians, Permians, and Viatkans. The three names are geographical, and denote three provinces of one ethnological area, there being hardly a dialectic difference between the languages of the tribes that inhabit them. Dr. Latham, who has a prejudice against any race movement, and treats almost all peoples as autochthones, has almost ignored the very conclusive evidence by which the great authorities on the subject have shown that these scattered fishermen are not the descendants of the renowned Bearmians of old days, but are immigrants of a recent date who have probably occupied an abandoned country. But for this his account of the Ugrians is both graphic and very interesting.

The modern Permia is a government taking its name from the recently-founded city of Perm, not far from the Urals, and has no connection with ancient Bearmia. Its inhabitants call themselves Komy-mort—*i.e.*, dwellers on the Kama. The Sirianians, who are really the same people living further north, also call themselves Komy-mort, or Komi-jas, Komi-woityr, which, as Castrén says, not only shows their identity with the modern Permians, but also that their ancient seats were also on the Kama. This is confirmed by other facts. Castrén was told by certain Sirianians, who were excusing their harsh conduct to the Samoyeds, that what God wills they must do. They have gotten the herds of the Samoyeds, but for the Samoyeds they had done great things. Before they (the Sirianians) came, the Samoyeds offered sacrifices to trees, and knew no more than dogs and stone-foxes. They had taught them how to take fishes and hunt with guns; they were sent as teachers (see Latham's "Nationalities of Europe," i, 214), where the anecdote is related. This shows the Sirianians consider themselves to be intruders upon the Samoyede area, and immigrants into a

portion of their present country. This country is scattered over with graves, containing metal articles and curious relics of a state of civilisation far other than that of the modern Sirianians and Permiens. Lastly, we have the fact that the old Bearmians were also known to the Russian chroniclers, and were called by them Sauvolotschekaja Tschuder, which is their synonym for Karelians. On this name Muller ("Ugrische Volkstamm, i, 344") remarks that wolok is Slave for a water-shedding or high land between two rivers, and is generally used in reference to those spots where there was formerly a portage between two rivers, where the boats were dragged across. Sa-wolok means beyond the water-shed, and in the case of the Tschudes was applied to those beyond the water-shed of the Dwina. These Transmontane Tschudes were, in fact, the Karelians of western writers, whom we shall show presently to have been emigrating in a westerly and south-westerly direction, and displacing the Yams or Hamalaiset, and whose culture and traditions both bespeak for them a dignified descent which cannot be said of the Sirianians and their allies; and Sjogren and others have made it very clear that we must look to the Karelians, if we are to find the descendants of the ancient Biarmians. The Finns are divided by the northern ethnologists into two sections: 1, the Karjalaiset (Karelians); and 2, the Hamalaiset. The former represent the old inhabitants of Biarmia and the country beyond the Dwina. They stretched eastwards probably as far as the Ural mountains, the Petschori on the Petschora being probably a section of them. We find that in the account of his voyage to Biarmia, written by Other in the ninth century, he mentions that he only found rude fishermen and hunters (doubtless, Lapps) until he reached the White Sea, when he came upon an agricultural race. This limit probably marks the then western march or boundary of the Biarmians or Karelians. On the south-west they were roughly bounded by the Dwina, which separated them from the other section of the Finns—namely, the Yams or Hamalaiset. On the south their boundary is uncertain, but it was probably not very far from the Uwalli mountains, which seem to be a very old ethnological frontier. To the second division—*i.e.*, the Hamalaiset—I affiliate all the other Tschudes who are found in Northern Russia, the Quains, Tavastrians, the Vod, the Tschudes of Olonetz, the Esths, and the Liefs.

In regard to the Quains, there is some difference of opinion among northern ethnologists, some classing them with one division, others with the other. A comparison of the vocabulary in the Asia Polyglotta of the Finn of Olonetz, confessedly a Yam dialect, with that of Finland, which can only be Quain, inasmuch as the Karelian has a separate column, will show that the Quain

is more nearly allied to the Yam than to the Karelian dialects. In regard to the Esth, there can be small hesitation. It is hardly distinguishable from the dialect of Olonetz, which is typically Yam. Having thus roughly divided the Finns, we may now consider their revolutions and struggles.

As we have said, the Tschud race of the old Russian chroniclers was divided by the Dwina into two branches; those beyond the river, or rather the portage, were called Sawolotschian Tschudes. This branch may be styled the Karelian branch. On this side of the Dwina were the other Tschudes, whose generic name seems to have been Jam, or Yem. The former have been an encroaching and pushing race, and have scattered and broken the Jam or Yem into fragments. The isolated and sporadic Tschud of the Waldai range in the governments of Tuer, Yaroslav and Novgorod are called Kargelaine, or Karelians. These have emigrated the most. The same is true of the Ingrikot or Izhors, who take their name from Ingermannland, and chiefly occupy the government of St. Petersburg, where they number 17,800, and are called by their neighbours Karelians. Even Dr. Latham, who will hardly allow of any race changes at all, argues that the Vod formerly occupied the greater part of this area, and have been displaced by the intruding Karelians. Lastly, the Savakot and Auramoiset, two other Finn populations of this area, also Karelian, the former numbering 42,979, and the latter 29,344, are said to have invaded their present country when, in 1623, the district of Agrepaa was ceded by the Russians to the Swedes, and with it Yeskis and Savolax. This drift of the Karelians has been constantly westwards and southwards, and I have no hesitation in concluding from all the evidence that they have come from the country beyond the Dwina, and now represent the Biarmians and Savolotschian Tshuds of the old writers. In regard to the Yam, they have been the subjects of two elaborate essays by Sjogren in the transactions of the St. Petersburg Academy. He concludes that they were formerly the primitive and dominant population of the governments of Olonetz and Novgorod, who are especially known as Tschudes to the Russians, and that they probably occupied the country south of the Karelians as far as the Ural mountains. I entirely adopt this opinion, and extend it so as to include the Esths and Liefs. Marahwa is very like in form the names Mera and Muroma, Ugrian tribes of Eastern Russia. The former, in Nestor's time, occupied the shores of the Lake of Rostof and its neighbourhood; and I believe that the Marahwas or Esths were once a continuous race with the Meres, their line of migration having been across the Ilmen Sea, known to the Russians as Tschudskoi Osero. Dr. Latham is mistaken when he says the Esths are not called Tschudes by

the Russians. Erdmann—a most unimpeachable witness—thus speaks of them (“Erdmann’s Travels,” i, 20): “One often hears applied to these people (Esthonians) the Russian discriminative term Chukoustsi, Chukhui, or Chudi, a word supposed by some learned Germans to be a proper name, but which really signifies a stranger.” At an early day—certainly during the few centuries after the Christian era—the area now occupied by the Esths was the abode of the Norsemen, whose graves in Livonia have furnished a fine harvest to the most indefatigable and widely-cultured of archæologists, Mr. Franks, and may now be seen at the British Museum. At that day the ancestors of the present Esths lay out to the east of Ingermannland.

The Tavastrians of southern Finland take their name from the district of Tavastehus, and they occupy the drainage of the many small rivers that fall into the Gulf of Bothnia and Finland. They are merely an offshoot of the Tschudes of Olonetz, who live about Lakes Ladoga and Olonetz. We have already mentioned the Lapp tradition, about their having been ejected from portions of Finland by the Tavastrians. To this may be added the fact that they are not named in the accounts of the several invasions of Finland by the Swedes in the middle ages, who name their neighbours, the Esths, Karelians and Quains. This shows that they are an encroaching race, and that they have invaded an area formerly occupied by Lapps and Quains. I have already said that the Quains belong, in my opinion, to the Yam class, being their most western portion. Quain is an old name; it is the Quean of the Scandinavian writers. Quean is a corruption of Kainulaiset. Kainu has the same meaning as Botn, from which the Gulf of Bothnia takes its name, and which means flat or lowland (Müller’s “Ugrische Volkstamm,” i, 451-2).

Kainu Maa therefore is simply the inhabitants of the Lowlands (the Lowlanders), and is derived from the flat lowlands that bound the Baltic on either side. The Queans are interesting historically. Tacitus mentions the Sitones as living continuously with the Suiones, and that the former were ruled by a queen. It was long ago suggested by an unknown writer, and the suggestion has been generally adopted, that we have here a misstatement of a curious kind. I will extract its explanation from Latham’s “Nationalities of the Russian Empire,” where it is very clearly put: “The Latin form of the root Kain, or Kainu, is Cajania, the old Norse Kænir and Koænir. As early as the time of Alfred, the Norse name was sufficiently current to have found its way into the Anglo-Saxon writings of that royal geographer, and Finland is the land of the Cvenas or Cvenaland. But quinna is Swedish for a woman, the same word as the English queen and quean, different in their degrees of courtesy

as the two words are. Now, it is by no means improbable that when a nation of Cvenas was heard of, a nation of women (quinneas) would be suggested. Out of this would come a nation ruled by a woman (queen or quean). This conclusion is not merely a likelihood; it is in three parts out of four a fact. The land of the Sitones, over which the informants of Tacitus are satisfied with making a woman a ruler, becomes, when we get to Adam of Bremen, a land of Amazons 'hæc quidem insula (Estland) terræ fœminarum proxima narratur'. Again, 'Circa hæc littora Baltici Maris ferunt esse Amazona quod nunc terra fœminarum dicitur quas aquæ justu aliqui dicunt concipere. Hæ simul viventes spernunt consortia virorum quos etiam si advenierint a se viriliter repellunt' (Latham's "Russian Empire," 70).

This identifies the Sitones of Tacitus with the Kainulaiset. We have said that the name in itself merely answers to Lowlanders, and is of no special value ethnographically. It may be that there has been no change in its application, and that the Queans or Lowlanders of Tacitus were the ancestors of the Quains or Queans of our day, for the Finns proper of Sweden are not only known now as Quains, but have been so termed from early times, and their dialect is identical with that of the Quains or Queans of Finland; so that it is possible that the Yams, of whom the Quains are only a section, held a portion of their present occupancy as early as the days of Tacitus. This is more probable, inasmuch as Tacitus distinguishes the Sitones from the Fenni, the latter of whom I have shown reasons for believing to have been Lapps.

Another fragment of the Yams are the Vods, now found in a small tract on the coast of the Gulf of Finland, between Cronstadt and Narva. They have been pushed here by the encroaching Karelians, and formerly occupied the greater part of the government of St. Petersburg, which was known from them as Vatland. One division of the old and mighty province of Novgorod was known also from them as Votskaia Petina. Among the Vods, "Tummet pajatha waiss," is "Do you speak Vod?" Thus Vod and Vess seem to be equivalent terms; and Sjogren has identified with great probability the modern Vod with the Vesses who in the days of Nestor occupied the Lake of Bielo Ozero, to the north-east of the later Vatland. The same great authority has shown, by his linguistic researches, that the Vod dialect is very nearly connected with the Tshud of Bieloserh, and through it with the Yam and Tavastian. The two circles which comprise their present country are, in fact, called Oranienbaum and Yamsloy. In the Russian chronicles, *sub anno* 1078, it is stated that Gleb, the son of Sviatoslav, was killed by the Jemen in Sawolotschia. This is the furthest east perhaps to which

we can carry the name, unless the following remarks may be applied to this race. The Arab geographer, Ibn Fozlan, cited by Yakut, tells us that north of Bulgaria, at a distance of three months' journey, was a people named Vissu, or Vischu, with whom the Bulgarians traded. This name was identified by D'Ohsson with the Vuitchajans, named among the inhabitants of Permian in an old Russian chronicle (see D'Ohsson's "Les Peuples du Caucase," 220); but I believe that they are rather to be identified with the Vesses of Nestor and the later Vod. This list of names is given at length by Castrén, thus: the Dwinians, Ustiughes, Wilgads, Wytschegdians, Peneger, Juger, Syrianen, Glijanians or Gangainens, the Wiatkans Lapps, Karelians, Jugrians, Petschoriens, Woguls, Samoyedes, Pertasses, Pur-tasses, Great Permiaks, Hamala Tschudes. Most of these names are those of rivers, as the Jug, Wiatka, etc., and among them the Wytschegdiens, whose name is derived from the river Wytschegda, the principal river of Permian.

If the above list be trustworthy (it was compiled before 1396, see Castrén, *op. cit.*, 138), we have fresh evidence that the Jemen extended into Permian, for among the names is that of the *Hamala Tschudes*. If the word Tschude again may be confined, as perhaps it may, to the Tavastian section of the Finns, we may extend them further, and make them conterminous with the Viatkans, for the chronicle of Chlynow, cited by Müller ("Ugrische Volkstamm," 395), enumerates the inhabitants of Viatka as the *Tschudes* Votiaks and Tscheremisses. Here we must leave this part of the question; resting until new evidence accrues upon the conclusions already mentioned—namely, that formerly the Dwina roughly divided the Karelians and the Jams, and that between them they occupied all the country north of the Waldai and Uwalli chains, and between the Urals and the Lakes Onega, Ladoga, and the Gulf of Finland. Why this area should have been abandoned and become a desert is not difficult to see. The climate has undoubtedly become much more severe in these latitudes during the last few centuries. It is notorious that the increasing cold put a stop about the thirteenth century to the navigation, which we know was common in the days of the Norsemen. I shall elsewhere collect abundant evidence of another kind to prove the greatly-increased severity of the climate here during the last few centuries.

Another great cause of the decay of ancient Permian was the rise of Novgorod, and the new course that trade consequently took. The inhabitants no doubt became impoverished, and lost their ancient splendour, and were forced to leave a land that was becoming unendurable from the increasing cold and the hard conditions of life. Many of them also, no doubt, followed

in the footsteps of their chief employers and patrons, the Norsemen. They drifted westwards towards the Baltic, and gradually lost their ancient country, Permia, which became a waste, marked everywhere along the rivers by their graves.

I have already said that the Sirianians and so-called Permians gradually overran this deserted area, and that both these tribes deduce themselves from the Kama. Some Sirianians still live on the Kama. Of this river, the river Syria is a feeder, and it is on this that we find villages named Syrianskoe (Latham's "Russian Empire," 47). This etymology is very reasonable, and seems to have escaped the Russian inquirers. The so-called Permians derive their present name by which they are known to the Russians from the modern city of Perm and its surrounding district, and have nothing to do even in name with the ancient Biarmia. Both tribes constitute really one race, with the common indigenous name of Kami Murt, itself but a geographical term. The total number of Sirianians is given by Latham, *op. cit.*, at 70,965, and that of the Permians at 52,204. They are, in fact, only outlying members of a third class—the Votiaks—from whom they do not differ in language or customs. The root of Votiak is Vot, or Vod, a name which we have met with before; the indigenous name is Udemurt. The Isheremis also call them Odd; Udi, Odd, and Vod being probably forms of one name. This name connects them with the Vod of Jugria, as Latham suggests, and it may be that we have in the Votiaks the primitive material out of which the Jem or Tavastrian Finns were developed. The Votiaks are now found chiefly on the rivers Kama and Viatka, and some in the governments of Kasan and Orenburgh, but they were not here always. Their tradition is that they came originally from the Kasanka, in the district of Arskoi Prigorod (Castrén, *op. cit.*, 137). Now, the Turks call the Votiaks Ari, and Arskoi Prigorod is the fortress of the Ari, so that this tradition is, *pro tanto*, confirmed. Besides this, we have the more important fact that the Votiaks are too rude a race to be descended from the occupants of such a great trade route as the Kama was in the days of the old Bulgarian prosperity, and that it is natural to suppose that they have since invaded an area which has been deserted by a more cultured people. The tradition goes on to say that it was the pressure of the Tartars which drove them into their present neighbourhood (Müller's "Ugrische Volkstamm," 388).

The Ural Mountains form a very natural rampart, as well as limit, to Eastern Europe. In most systems of geography, they are recognised as a march or frontier which separates two very distinct provinces of physical geography. For the most part practically impassable, save to hunters and fishermen, whose *im-*

pedimenta are easily packed, they offer only at each extremity facilities for an invading force. It has thus come about that most of the invaders of Europe have turned the southern buttresses of these mountains, which have been, in fact, the chief marching ground of the world.

While scores of inquirers have puzzled themselves and their readers by trying to unwind the race-tangle that these incessant marches and countermarches of invaders have caused in South-Eastern Europe, there has been by general consent a shirking of the problem that arises at the other extremity of the Ural chain. It has been taken for granted that the cold would be too severe, and the Tundra wastes too uninviting to tempt any pressure of invaders in this direction, and that consequently what we find there are autochthones or aborigines, and have nothing to do with the general current of race-change. This is not unreasonable, but it is not absolutely true, although it coincides well with the views of some ethnologists about fixed and sedentary types of man.

The area between the White Sea and the northern spurs of the Ural Mountains is now occupied by the so-called Samoyedes, a race which differs generically both in language and other respects from the Finnic or Ugrian branch of the human family. Dr. Latham has some very judicious remarks about the name Samoyede in his account of the "Races of the Russian Empire," 114. It is not indigenous to the race to which it is applied, but is a foreign name given to it by its neighbours. As Castrén has shown, it has a Finnic or Siranien etymology, and is in origin identical with Samojetia (a portion of Lithuania), Suomelaiset, etc. The root is Sami, the very name which, as we have already said, the Lapps know themselves by; a root we have in English in the word swamp. Samoyede means merely fen-men, marshmen, and has no more ethnic value than Highlander, Lowlander, etc. It is a geographical, and not an ethnic name. When Nestor therefore speaks of Samoyedes, we must understand nothing more than that he was referring to those who lived on the Tundras or mosses of North-Eastern Russia.

So long ago as 1838, Schrenk, in a paper read before the St. Petersburg Academy, on the Skeletons of two Mammoths found in the Samoyede country ("Bulletin St. Petersburg Acad.," iv, 1), showed that that country was strewn with old graves containing metallic objects, which the Samoyedes point to as the remains of the Sihrtje, as they call them (the Zirianens of western writers), who they say occupied that country before them, and that they now live in the bowels of the earth, and are a very wealthy and advanced people, which is proved by the copper, iron, lead, and tin weapons and utensils found in their mounds.

In Castrén's "Ethnologische Vorlesungen über die Altaische Völker," etc., St. Petersburg, 1857, page 86, I find the following very valuable remarks: "The only district in which the Finns seem to have been obliged to give up their country to the Samoyedes is the district to the west of the Ural. That Finnic races of old time lived here, I have attempted to prove in an essay on the Sarvolotsien Tschudes. ('Suomi Tidskrift i fosterländska ämmen.' Fjerde argangen. Helsingfors, 1845, i, 23.) Among other grounds for this opinion, I there set out the traditions common to both the Russians and the Samoyedes, concerning the Tschudic people, who are called Sirtje by the Samoyedes. The story goes that this people, on the arrival of the Samoyedes, fled into the bosom of the earth, where they still live and tend the foxes, *Mammoths*, etc. I have strengthened this tradition by the production of a great number of Finnic names of places in this district. Thus there exists here a river named Ishma, derived from Isoma. It springs in the tundra called by the Russians Zembla, and the Samoyedes Arka ja (Great Land). Another river is called Tsylna, from the Finnic word Kylma; a third, Pjoscha, Finnic Pesa; a fourth, Oja; a fifth, Kuloi (*i.e.*, fish river). Perhaps the word Samoyede is also of Finnic origin (Lapp Samejedne, etc.). In addition, one may quote the numerous references to Biarma land and its Finnic inhabitants occurring in the Sagas to prove that the Finns must have lived on the tundras west of the Ural, or rather the rivers flowing through those tundras."

These extracts are sufficient to prove the position that the Samoyedes have here incroached upon an ancient Finnic habitat, thus offering one instance at least where a race which lived in a bronze or iron period of civilisation has been displaced by one which until very recently, if not even still, was living under the conditions prevalent in a stone or bone age.

I do not believe that this migration was the result of a successful attack on the previous inhabitants. When the Samoyedes wandered over this area it was probably deserted.

We have therefore pushed back the Samoyedes beyond the Urals. I believe their migration to the west of that range is comparatively recent; and that, at all events in the days of the Norsemen, the Karelian Finns occupied their country.

But we cannot limit this migration to the west of the Urals as Castrén does. It was his notion that all the Turkic, Finnic, and Samoyedic races came originally from the Altai, and much of his reasoning is coloured by this prejudice. Thus it was a part of his theory to make the Samoyedes be driven west of the Urals by the Ostiaks, who were constantly pressing northwards. Now, it is my purpose to show that there has been no general drift of population from south to north on the east of the Urals,

but that the course of migration, with very slight exception, has been in the opposite direction.

On the further side of the Ural chain we find the vast watershed of the Obi and its tributaries. Here the prominent ethnic name is Ostiak. To this name there are the same objections as to the name Samoyede. Erman, in his "*Siberian Travels*," ii, 240, states with some confidence that the name Ostiak is indisputably derived from the Tataric word Ushstyak, a stranger. I believe this to be a false etymology, and that probably the latter word is derived from the former. In a paper on the Voguls, read by Dr. Ronay before the British Association, it was stated that Ostiak is merely Obstiak—*i.e.*, dweller on the Ob. This is a much more probable derivation, if we consider the origin of the parallel names Votiak, Meskeriak, etc., etc.; if we consider also that the Ostiak habitat is limited to the Valley of the Ob. This being in our opinion its etymology, the objection to the name lies in the fact that it has been applied indiscriminately to three distinct and separate races, all living in the same river system. Thus we read of the Ostiaks of the Jenissei, a very curious and very distinct race, who were first discriminated by Strahlenberg, were called Jenissians by Klaproth, and have been the subjects of an elaborate linguistic work by Castrén. We shall have much to say about them in a future paper.

Then we have the Ostiaks properly so-called, who are a Ugrian or Finnic race, and who occupy the greater part of the Valley of the Ob, and of whom also more presently.

Lastly, we have the Ostyaks of the Mouth of the Obi, who are Samoyedes, and are so called by all recent writers. These Samoyedes are confined to the Tundras bordering the Polar Sea and the country north of Obdorsk. Their land is divided into two portions by the Gulf of Obi; that on the west, known as Kamenaia, or the Highlands, extends westwards as far as the Karen Sea, where it touches the land of Poustozersk; that on the east, called Nisovaia, or the Lowlands, stretches from the Obi to the land of the Samoyedes of Jouraki.

In all this area the Samoyedes are found clinging to their natural habitat, the treeless moss that borders the Polar Sea.

Now, Pallas tells us ("*Voyages*," iv, 90) "that these Samoyedes assert that they came from the East, and this is confirmed by other facts. It coincides with what we have said of the Samoyedes of Archangel, who have also come from the East. The Ob Valley knows them not below Obdorsk, while in the great Tundra wastes of the Jenissei they are the predominant race. There can be small doubt, from the evidence collected by Wrangel, which I hope some time to digest and present to you, that the whole Arctic border land of Asia has encroached immensely on

the sea, making its climate much more severe, and also acquiring a fringe of treeless tundra, which the vagabond Samoyedes have naturally occupied.

I have no doubt that the strip of Samoyedic population that is found fringing the Polar Sea from the Jenissei to the White Sea has recently occupied that area, and has encroached chiefly upon a Finnic population, and I shall treat the Valley of the Jenissei as the frontier until recently between the Ostiaks proper and the Samoyedes.

The Ostiaks proper, or the Ugrian Ostiaks, are a very widely-diffused race. They occupy the whole Valley of the Obi, from below Obdorsk to where it forks into its two head-rivers, the Jrtysch and the Upper Obi. They occupy the banks of the former river to three days' journey below Tobolsk, where they lie next to the Siberian Turks, known as the Tatars of Tobolsk; they also occupy the Upper Obi. The Ostiaks are not a homogeneous race. According to Castrén (*op. cit.*, 100), there are found on the lower Ob many with a blonde complexion, who are very like the Siraniens in looks. Here are also to be found several names with Siranien etymologies — *e.g.*, names compounded with Kar, a town; Obdor Ob, the river; and Dor, Syranien for the furthest, etc. In the language of this district there are also to be found many words of Siranien and Permian origin. These facts are very interesting, because they explain to us a tradition given in the "Nouveaux Mémoires sur l'État présent de la Grande Russie," etc., Paris, 1725, ii, 173, and afterwards by Müller, which has caused some confusion in ethnography. According to this, the Ostiaks formerly lived in Great Permian, near Solkamskoy; but when the bishop (Stephen the Apostle) of those parts, in 1380 *et seq.*, tried to convert the Permians to Christianity, some of them accepted his message, but the rest emigrated to the other side of the Urals. This tradition is very reasonable, and is proved by the traces of Siranien mixture among the Ostiaks below Berezof; but it becomes ridiculous when it is attempted to derive the whole Ostiak population from these emigrants. The Ostiaks differ very materially from any of the Permian tribes, who, with the exception of those living on the Lower Ob, are pretty homogeneous. We have now explained the causes of this exceptional idiosyncrasy, and dated its first origin.

In proof that the Ostiaks are old occupants of the valley of the Ob, may be cited, *inter alia*, the fact quoted by Erman (Siberian Travels, i, 464. There is a very old larch in Beresof, fifty feet high. This tree was formerly an object of reverence to the Ostiaks, who hung about it offerings of various kinds. Among these were coins, which were carried into these remote

parts by Bokharian traders long before the Russian conquest of this country. These coins are still preserved as heirlooms in the remoter Ostiak yurts.

The Ostiaks are bounded on the west by the Voguls, who differ from them chiefly in being hunters, while the Ostiaks are fishermen. The Voguls call the Ostiaks Mansi, the very name they give themselves, so that they make no difference between the two races. Both are styled by the Siraniens Jograyas (Jogra in the singular), (Castren, *op. cit.*, 129). This latter fact is most interesting, and clears up their history very considerably.

Jugria, or Jugoria, is the name of a province of some note in Russian history. From it peltries and other rich products were conveyed into the grand dukedom, and its history has been examined at some length by Lehrberg (*Untersuchungen zur Erläuterung der Altern Geschichte Russland*. St. Petersburg, 1816, iii, 4, and Castren, *op. cit.*, 93).

According to those authors, Jugria was bounded on the west by the Ural Mountains, on the south by the Siberian Tatars, on the east by the rivers Nadym, Agan, and Wash, and on the north by the Samoyedes. If what we have here said is true, we may extend the limits of Jugria to the Polar Sea, inasmuch as we hold the Samoyedes to be but very recent immigrants into their present country.

Although the Syraniens call both Voguls and Ostiaks Ugrians, the Russians have generally distinguished them; thus Herberstein *Rer. Moscow Comment.* p. 82, says: The Vuogulici and the Ugritzschii inhabit the river Oby, and in the several old accounts of the conquest of Jugria by the Russians relied upon by Karamzin, we have the same enumeration of its inhabitants as Vogulitzii and Ugritzi. As the languages, the traditions, and the customs of both are so nearly allied, the two names were probably of geographical meaning rather than ethnic.

The Voguls, according to Muller (*Ugrische Volkstamm*, i, 162, *et seq.*), have spread considerably of late; the Northern Urals are their primitive hunting-ground. Hence they have wandered, on the one hand, to the Kama, and on the other to the Tawda, the Tura, and the Irtysh in the east, and the Tschussowaja, in the south-west. Their name is probably to be recognised in the names of two rivers, the Vogulja, a tributary of the Sygma, and the Vogulka, which flows into the Obi, near Berezof. They bordered the Syraniens on the east, and as the occupation of the latter became contracted, their holding doubtless extended to the Kama. All the facts we know go to prove that the Voguls have moved from their old quarters, and have moved in a contrary direction to that required by the theory of Castrin.

In regard to the Ostiaks, our facts are fewer, but what we have have the same tendency. I will merely quote a striking one from the work of Muller already cited, p. 301. The Ostiaks of the Jenissei, and those bordering on the southern Samoyedes, call themselves *Kondycho*, *i.e.*, Dwellers on the Chondi or Konda. The Konda is a well-known western tributary of the Obi, which flows through a very typical land of the Ostiaks. So that those furthest-travelled among the Ostiaks must have come a long way from the north-west, if their name does not belie them.

We have thus shown that at an early date, namely, in the centuries preceding and up to the sixteenth century, the Samoyedes probably lived beyond the Obi altogether, and the Ural Mountains formed an important boundary, dividing two geographical provinces of some note, namely, Weliki Permia or Great Permian, and Jugria or Jugoria, dividing also two branches of the Finnic race, namely, the Carelian Finns, the Permians, and Syranians, from the Voguls and Ostiaks; and, further, that the drift of these latter folk was from north and north-west, to south and south-east.

Having taken a survey of the ethnography of northern Russia and the country on either side of the Urals, I must now in conclusion direct attention to some of the interesting archaeological questions which are involved in the subject, and which have been much overlooked in England. The manners and customs, the religion, language, and physical appearance of the tribes I have mentioned, are familiar enough from the accounts of many modern travellers. The important gap they filled in the distribution of the world-culture and wealth in former days are not so well known, nor have I got material for a thorough investigation of the question; but there are a good many isolated and buried facts which ought to interest this society.

I will begin with the Ugrian tribes who bordered the Polar Sea, and who occupied the Northern Urals and the Ob. Ebn Fozlan, the Arabic geographer, who is quoted by Yakut, tells us that the Bulgarians were bounded on the north by the nation called Vissu (*vide ante*). Among them the night in summer was only an hour long. The commerce between the Bulgarians and the Vissus was carried on after this wise. Each of the Bulgarian merchants deposited his merchandise, distinguished by his private mark, at a certain spot, and then retired. On his return he found placed by the side of each article some product of the country of the Vissus. If the merchant was satisfied, he took this in exchange, if not, he took back his own. The same mode of traffic was practised by the African tribes of the Soudan (*See* Cazvini and Bacouya in D'Elisson's "*Les Peuples du Caucase*"), The Vissus were neighbours to the Youlras (*i.e.*,

Ugrians or Ostiaks, *vide ante*), who dwelt by the cloudy sea, where in summer the sun remained for forty days above the horizon, and in winter there were an equal number of nights of forty-eight hours. The Youhras had neither herds nor cultivated lands; they lived on fish and the products of the chase. The Bulgars sold them swords made by the Mahometans; they were simply rough pieces of iron direct from the forge, which, when hung by a thread, and struck, resounded loudly. The Youhras bought these at a great price. They cast them into the cloudy sea, and their god caused a fish big as a mountain to come out of the waves, pursued by a still larger fish, who wished to devour it. The first, in its haste to escape, was stranded, whereupon the hunters cut away at its flesh. Sometimes the tide took the fish out again, and enabled it to escape after a large quantity of flesh had been carved out of it. They said that unless they cast this sword into the water, no fish would come, and they would die of starvation.

This *naïve* relation of the old Arab traveller points clearly to a whale or narwhal fishery at the northern borders of the Ūral chain. The story becomes more quaint as we proceed. Once one of these fish having got into the shallows in the Youhra country, the inhabitants passed a cord through its gills, and drew it ashore. Upon this there came out of one of its gills a young damsel of great beauty, who was of a rosy-white complexion, and had black hair. The Youhras placed her on the ground, but she struck her face and dragged her hair, crying pitiably meanwhile. God had made her a piece of skin like an apron, which covered her from her throat to her knees. She lived some time among the Youhras. They told other strange things about the country of the Youhras; thus it was said that when one of the former planted his foot in Bulgarian soil, the temperature at once fell even in the middle of summer, and became so cold that all the fruit perished. These traveller's tales reported by Cazvini and others are quaint, and they illustrate the sort of talk that was prevalent in the great markets of Bulgaria, and the general knowledge that the Arabs had of the distant polar regions before the eighteenth century.

Skins, salt-dried fish, and fish-roe and ivory (fossil and marine) were the chief products of these northern latitudes, which were eagerly bought by the Arab traders, and transported to the luxurious courts of Bagdad and Byzantium. The ivory suggests an interesting inquiry. A portion of it was fossil. Cazvini, Ibn Haoukal, and others, have some curious information about this. One of them mentions having seen immense teeth, two palms in width, and four in length, and skulls as large as Arab huts, and tusks like those of the elephant, white as snow,

and weighing two hundred menns. (These are clearly the mammoths' teeth still an object of traffic at Archangel and in Siberia.) The Arabs go on to say that these tusks were transported to Khorazm, the modern Khiva, where they were sold at great price, and that they were there converted into vases and other objects. This custom prevails still among the Samoyedes, Yakuts, and others. Ermann tells us (ii, 86) that the Samoyedes carve out of mammoths' teeth the ornaments for their sledges and drinking cups. The Jukajirs use slices of the horns of the fossil rhinoceros to line their bows with, *id.* 382. In the Christie collection may be seen elaborate figures and domestic objects, carved out of mammoth ivory by the Yakuts and Tunguses. This custom always seems to me to throw some doubt on the relative antiquity of those craftsmen whose carvings on mammoth ivory, etc., have been found in the French caverns. If, in the Reindeer period, France was as cold as Siberia, it is more than probable that carcasses of mammoths might survive on the banks of the Seine and the Thames, as they still do on those of the Lena. There is, further, no great difficulty in believing that what the Jakuts and the Esquimaux can do now in the way of drawing and sculpturing, could have been done by the French reindeer-folk, whose remains show them to have been quite equal in skill at least to the Esquimaux. This by the way only.

Besides the fossil ivory, there was also that derived from the walrus and the narwhal, out of which so many Norse relics were carved. Now, among the presents sent by the great Khaliph Harun al Raschid to Charlemagne, were the horn of a unicorn and a griffon's claw. These were long among the greatest curiosities at St. Denis. The former was made the subject of an elaborate inquiry, written at the Hague in 1646—*See Churchill's Travels*, 387, in which it is said that this horn was altogether like a similar one at Copenhagen, and that the Danes are of opinion that all those kinds of horns found in Muscovy, Germany, Italy, and France, came from Denmark. The Danes sold these horns as unicorn horns The horn at St. Denis had the same root as the rest, hollow and worm-eaten at the end, like a rotten tooth. "This being granted," says the writer, "as it is really true, I will positively assert it to be a tooth fallen out of the jaw-bone of the same fish known in Iceland by the name of narwhal, and that consequently it is no horn" (*see op. cit.*).

In regard to the griffon's claw, it is a curious fact that a writer in the Bulletin of the St. Petersburg Academy, in discussing the griffons, makes out that the so-called claws are the horns of the Siberian rhinoceros. This is confirmed by Ermann,

who tells us the natives mistake these horns for the claws of a gigantic bird (see very curious account in Ermann's travels, ii, 86, 380). So that the presents sent by Harun al Raschid were no doubt a portion of the spoil which his emissaries and traders had bought at Bolghari, or some other mart of the Volga and Kama, and had come from the country of the Youhras, at once a proof of the energy of the Arabs in their prosperous days, and an explanation of much mediæval romance. This ivory was doubtless also exported by the Norse traders from the ports of Biarmia, and was used by them in carving the chessmen, caskets, etc., of which examples are still extant. In regard to the chessmen, a large number of which were found in Lewes, and are now in the British Museum, it is curious that in an account of Iceland, written by M. la Peyrere in 1644, published in the same collection of travels, it is mentioned that the Icelanders were still great chess-players, "there being not a peasant in the country but what has a set of it, which they make themselves out of fish-bones; the whole difference betwixt theirs and ours being only that our fools stand for their bishops, because they say the clergymen ought to be near the king's person. Their rooks represent little captains, whence the Iceland scholars call them Centuriones. They are represented with swords on their sides, with bloated cheeks, and as if they were blowing the horns they hold in both hands." This account agrees wonderfully with the actual relics from Lewes left there by some ancient Norse freebooter.

We mentioned Biarmia. This suggests a few words about the Finn culture in old days. Here I shall have recourse again to Geiger. They were the great miners of the North and East. "The preparation of marsh iron was known to them from an early period; for marsh ore (*myrmalin*), which our ancestors called *gräsjern*, the Finns have a native appellation—*hólmä*. Iron in the Finnic and Lappic is called *ranta-route*, and the hundred of *Rantalambi* in Finland has its name from *ranta* and *laumi*, lake or marsh, *i.e.*, from marsh iron: an old Finnish Rune called *Rantan synty*, sings of the birth of iron. In the Fennic tongue every handicraftsman is called a smith (*seppä*), and Finnish swords are mentioned in the Icelandic sagas. The most famous smith known to the ancient North, and celebrated in the *Edda*, is the son of a Swedish king on the borders of *Smithiod*; and in later times the Finns retained the praise of excelling in the labours of the forge" (Geiger: *Hist. of Sweden*, 29). Not only do they excel in iron manufacture, but also in the making of trinkets out of other metals. The Finns of *Dalecarlia* are great miners; both silver and tin are worked by them, and I have small doubt that the Norsemen, who loved agricul-

ture, and piracy, and trade, were indebted to the Finns for their metallic craftsmen. I shall return to this subject on a future occasion.

Bearmia, besides being a home of the arts, was also a main highway of commerce. The Norse merchants who traded at Bolghari traversed it, and brought by this route those hoards of cufic coins which are found in so many places frequented by them, and notably in Scandinavia and in Iceland. The great emporium of Bearmia was Tcherdyn, and in the grave mounds in its neighbourhood Strahlenberg reports that many Arab coins were found. Much information on the archæology of this district has been collected by the Russian inquirers. They have opened quite a new vein in archæology, and I trust on some future occasion to bring before you some of the ore they have discovered.

The meeting then separated.

JUNE 17TH, 1872.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the SOCIETY.—*Mittheilungen der Anthropologischen Gesellschaft in Wien*, March, 1872.

From JAMES BURNS, Esq.—*Human Nature* for June, 1872.

From the EDITOR.—*The Mining Magazine and Review* for June, 1872.

From the ASSOCIATION.—*Journal of the East India Association* for May, 1872.

From the EDITOR.—*The Food Journal* for June, 1872.

From the EDITOR.—*La Revue Scientifique*, Nos. 50, 51, and 52.

From the SOCIETY.—*Report of the Royal Society of Tasmania*, 1870; *Papers and Proceedings*, ditto, 1870-1.

From the SOCIETY.—*Bulletin de la Société Impériale des Naturalistes de Moscou*, Nos. 3 and 4, 1871.

From the EDITOR.—*Medizinische Jahrbücher der K. K. Gesellschaft der Aerzte in Wien*, No. 1, 1872.

From the ASSOCIATION.—Proceedings of the Geologists' Association, for April, 1872.

From the EDITOR.—Archivio per l'Antropologia e la Etnologia, vol. ii, No. 11, 1872.

From the AUTHOR.—The Discovery, Survey, and Settlement of Port Phillip. By G. W. Rusden, Esq.

From the EDITOR.—Nature (to date).

From the EARL of KIMBERLEY.—Vocabulary of the Aboriginal Dialects, Wellington District, of New Holland, 1839, by James Günther, Esq.—An Australian Grammar, 1834, by L. E. Threlkeld, Esq.—Language of the Aborigines of the Colony of Victoria, and other Australian Districts, by Daniel Bunce, Esq.—Gurre Kamilaroi, or Kamilaroi Sayings, by Rev. Wm. Ridley.—Memorie Storiche Dell' Australia, by Mons. D. R. Salvado, O.S.B.—Manuscript relating to the Australian Aboriginal Language.—Vocabulary of the Dialects of some of the Aboriginal Tribes of Tasmania, by J. Milligan, Esq., F.L.S.

Mr. A. W. FRANKS exhibited photographs of the Tattooed Man from Burmah, and read the following communication:

In the *Times* of November 3, 1871, appeared a paragraph copied from the *British Medical Journal*, respecting the appearance at Vienna of a man tattooed in a remarkable manner all over the body. A more detailed account appeared in the *Lancet* of February 3, 1872.

Happening to pay a short visit to Vienna a few weeks since, I ascertained that the tattooed man was no longer in that town; but, through the kindness of Dr. Sigmund Wahrmann, Secretary of the Anthropological Society of Vienna, I obtained the four photographs which I exhibit on the present occasion. I did not myself see Dr. Wahrmann, and though I met with several persons who had seen the man, they were not well versed in anthropological matters, and I did not obtain any particulars.

In the account from the *Medical Journal* of November, 1871, it is stated that the man was a Greek, who had been a pirate. Seven years ago, he and five companions were taken prisoners by one of the wild tribes of Asia. Three of them were put to death, but this man and two others were preserved alive, and literally tattooed all over the body. The operation lasted two months, and was performed by six men, who each day operated on different parts of the body. The operation caused horrible pain, and his two companions died under the treatment.

The account in the *Lancet* of February 1872 (reprinted in the *Times* of February 2), is more minute, being derived from the *Wiener Medizinische Wochenschrift* for January 13. The following is an extract from this account:

"This man states that he is an Albanian, forty years of age,

and unmarried. Besides Greek, his native tongue, he speaks Arabic and Persian fluently; French, Spanish, Italian, German, and English with various degrees of fluency and correctness. His accounts of his life vary somewhat. According to one statement, he has been for the last five years engaged, together with eleven companions, in fortune-hunting, in the shape of working gold mines in Chinese Tartary. During a rebellion which occurred in that country, he supplied the rebels with arms; and upon the defeat of the insurgents, was with his companions taken captive. Nine of the prisoners were put to death; the remaining three, including himself, were sentenced to the punishment of tattooing, in order that they might ever hereafter go about as marked men. One of the victims died, either in consequence of the severity of the operation or from disease; a second, blind, lives yet at Hongkong; while the third, the subject of the present communication, managed to make his escape through China to a port on the India Gulf. Thence an English ship brought him to Manilla, thence to Hongkong, from which place he returned *viâ* Suez to Greece. According to another account he engaged, together with some Frenchmen, in hostile operations against the Chinese, by whom he was taken prisoner and tattooed."

Another and more full account appeared in the "Journal of the Geographical Society of Leipzig," to which my attention has been called by Mr. Clements R. Markham, who has kindly furnished me with the following translation of it:

"The foreigner is a Suliote, called Georgius Constantine, and is a native of Albania. Amongst his exploits (he is master of Italian, French, and English) he took part in the French expedition to Cochin China with the object of penetrating into the interior of further India and Burmah in quest of gold. By Ava on the Irrawaddy this band was proclaimed hostile on account of their taking up arms against the natives. He, with eleven companions, fell into the hands of the Government troops. Nine of these were executed; he and two others were spared their lives, but condemned to the 'tattoo process.' This process was very severe, for one died, and the other became blind in the course of it. This happened in Bhamno, on the Irrawaddy.

"The tattooing took three months, and was so severe that he had to be held down by four men, and submit quietly to the operation under fear of death. After a lengthened imprisonment he escaped, and after a four months' tramp through China he managed to reach Amoy in safety. The European Consul himself gave him the means to reach Manilla, where he lay sick for some time. Through Hongkong he returned home *viâ* the Suez Canal to Europe; came to Vienna, where he stayed some time, and was sought out by physicians as an ethnological curi-

osity; thence went on to Munich, and is now under the care of Dr. Thiersch at Leipzig. From hence Georgias intends to visit Berlin and London.

"The tattooing was the subject of a treatise by Dr. Kapost of Vienna, 'The Tattooed Man of Burmah,' in No. 2 of the *Vienna Weekly Journal of Medicine*. This account is exhaustive, and portions of it are here given. The tattooed man is about forty years of age, of medium height, is handsome and strongly built, and well proportioned. He has a long black beard; his long black hair lies in two masses (?) over his head. His countenance is not ignoble. Moreover, when stripped, he gives one the idea of being entirely clad in a tightly-worn fabric of rich Turkish stuff. From the crown of his head to the points of his toes his skin is entirely covered with tattoo figures in dark blue, with occasional intervening characters in red. The soles of the feet are alone free. Moreover, the interstices between the figures are filled up with smaller blue and red characters. The hands are covered with these characters only. These blue devices even appear amid the thick hairs of the head and beard. On the forehead, on either side of the middle line, are to be seen panthers; the interval is filled up with characters.

"The total number of figures is 388, which are distributed over the body as follows:

Breast, as far as the waist	...	...	...	50
Left arm	...	...	...	51
Right arm	...	...	...	50
Back, as far as the waist	...	...	...	37
Neck and throat	..	...	...	8
Lower portion of the body	...	...	...	53
Lower extremities	...	...	...	137
Two figures on the forehead		...	...	2
Total	...	...	...	388

The figures are all tattooed in blue and are symmetrically arranged on both sides of the body on the breast, being two crowned sphinxes, two snakes, two elephants, two swans, and in the middle a horn-owl. The figures consist of sphinxes with crowns on their heads, apes, leopards, cats, tigers, eagles, storks, swans, peacocks, snakes, men, women with dresses, panthers, lions, elephants, crocodiles, salamanders, dragons, fishes, gazelles, fruit, leaves, flowers, and objects of every description.

"The characters in writing on the hand are adjudged by Professor Muller to be Burmese. Professor Muller and Dr. Pollak, late physicians of the Shah of Persia, asserted that Georgias speaks Arabic and Persian fluently. The small particles of flesh which appear between the figures and characters are of the normal colour;

the skin is soft, supple, and of fine texture; the glands are not swollen, and the perspiration is not affected.

"The figures show considerable skill in their outline and general execution. It occupied the artist three months to complete the job, working three hours a day. The tool used in the work is about fifteen inches long altogether, the point being five inches in length, and split like a pen-point. Dr. Kaposi considers the colouring matter employed to be vegetable, though with our sailors, soldiers, and others, gunpowder and cinnabar are usually employed."

It will be observed that the accounts given by the man himself differ from each other. It seems scarcely credible that the tattooing could have been completed in the time stated, as the irritation thus produced would, it must be supposed, bring on death. There can be no doubt, however, that the tattooing is genuine Burmese tattooing, as shown by the sketches from a model of a Burmese man in the Christy collection, although it extended in Georgias beyond the usual limits of the process. The designs, however, are very carefully put together, and must have been executed by a first-rate artist. Such tattooing is very costly in Burmah; and I am informed by Sir Arthur Phayre that when criminals are tattooed as a punishment it is done in a large inscription across the breast, a part of the body rarely covered in Burmah.

That Europeans are occasionally tattooed in Burmah, and that the process is costly, is shown by a letter which appeared in the *Lancet* of May 18, 1872.

To the Editor of the "Lancet."

SIR,—In the *Lancet* of February 3rd there is an account of the tattooed man of Vienna. In the year 1861, when at Rivière du Loup, Canada, I had the fortune to meet with much such another person. This man's name was Chambers; he had been lieutenant and adjutant of the 49th Regiment (he showed me his commission). I was two days at the same hotel with him, during which time he kindly stripped himself for my inspection. He was a tall, thin man, about fifty-two years old; grey hair; the whole of right side of face covered with strawberry stain. Commencing with a collar round the neck, and terminating at the wrists and middle of calf of legs with a most elaborate piece of embroidery, the whole of the body inclusive was one mass of tattooing. The main figures consisted of Burmese gods and goddesses, the intermediate spaces filled in with Burmese inscriptions, birds, beasts, fishes, and scrolls. There was not the space of a pin's-point left uncoloured, the colours used being red, black, and blue. Mr. Chambers' account of the matter is simply the following: That when stationed with his regiment in Burmah (I have forgotten the year he said) many years ago, he, for the curiosity of the thing, had himself tattooed in this manner; the amount he paid the man who orna-

mented him was £40 sterling. He also said that it was a very common thing amongst the natives, and Europeans frequently commenced the beautification but generally got tired of the pain before the affair was finished.

When at Quebec, last year, I asked if he was still alive, but was informed that he had died. This poor man had for many years earned a living by travelling the world over, blowing a penny whistle, and playing the concertina, which he did in a wonderful manner. He was not in the habit of exhibiting his tattooing, and it was only my being a military medical officer, and talking to him, that made him show himself to me; he seemed rather ashamed of his youthful freak. May not the Vienna man in all probability have been tattooed also in Burmah?

I am, Sir, yours, &c.,

G. E. GASCOIGNE, M.D., late R.A.

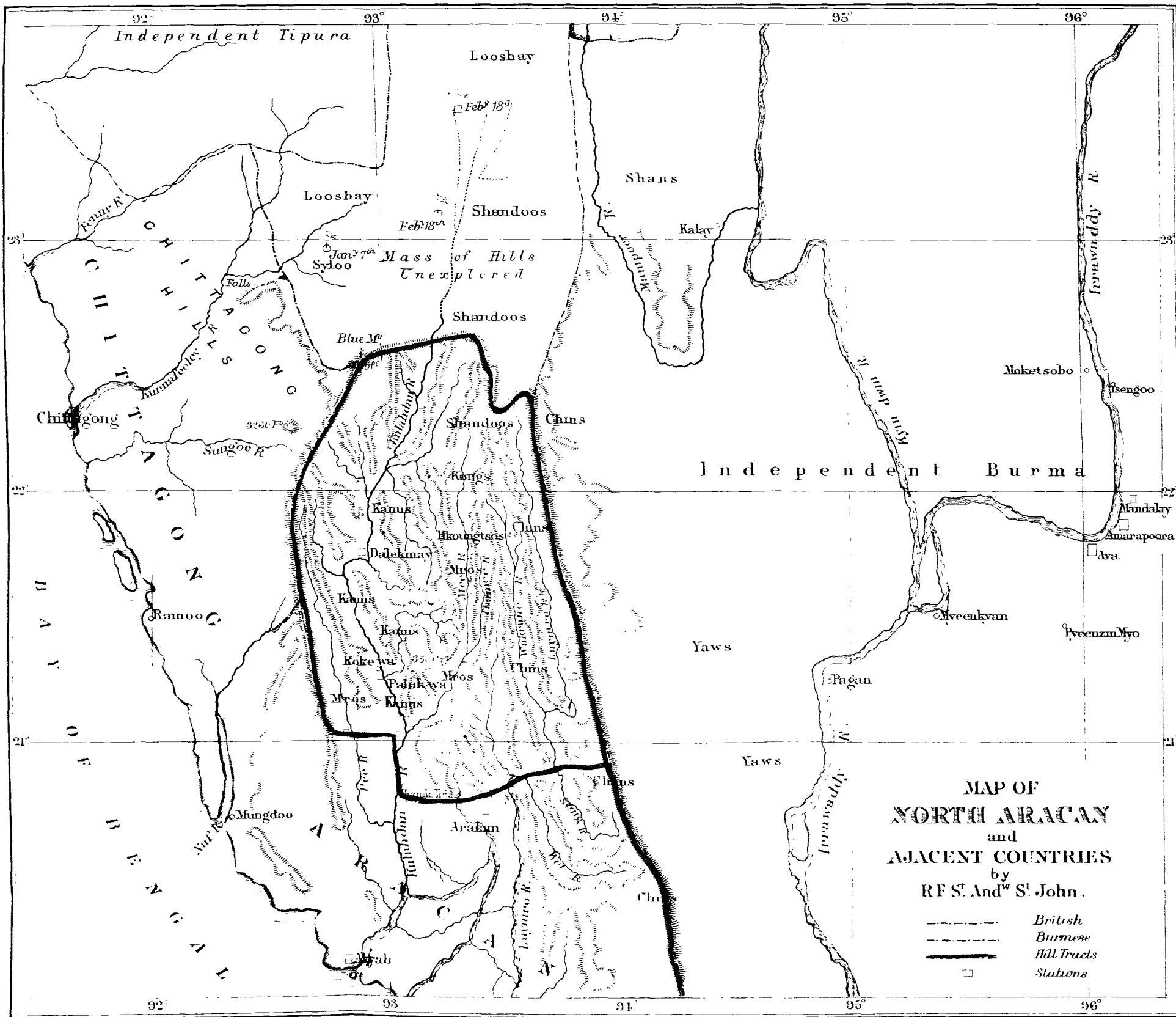
Brockville, Ontario.

The practice of tattooing among the Burmese is noticed in the following works:—Symes, "Embassy to the Kingdom of Ava," 1795, p. 312. He gives as a reason for tattooing, the belief that it operates as a charm against the weapons of enemies. Alexander, "Travels from India to England," 1827, p. 17, who describes the process as "performed with a long steel needle loaded at one end and divided at the other to contain the liquor, which is either red or blue." In Crawford's "Journal of an Embassy to the Court of Ava" (2nd edition, 1834, vol. ii, p. 95), a long account is given of the process and designs as well as the process of neighbouring races. Other accounts are to be found in Malcolm, "Travels in Hindustan, etc.," 1848, i, p. 218; and Winter, "Six Months in British Burmah, 1858, p. 55.

The whole question of tattooing is one well deserving the attention of the ethnologist, and would furnish the subject for a work of some extent.

DISCUSSION.

DR. J. MILNER FOTHERGILL said that he was at Vienna at the time this tattooed man was first exhibited by Professor Hebra, and had repeated conversations with him, as well as several opportunities of inspecting him. The tattooing was very beautiful, and involved the whole skin. The whole story was intrinsically incredible, and was to the effect that it was done as a punishment in Bokhara, and that it took three operators three months to complete it. It is regarded as a worse punishment than death, and two other unfortunates died from the effects. The man's aspiration seemed to be to make himself out one of the most unscrupulous and bloodthirsty of scoundrels, an idea thoroughly warranted by his physiognomy. The tattooing is evidently done in imitation of Doorga, the wife of Siva, the oldest demon god of India, and the red hands indicate her thirst for blood. The man also translated the letters in the palmar aspect of his fingers



as words of Arabic abuse indicating his character. At a meeting at Vienna, a discussion resulted in the conclusion that the words were Burmese, and the whole workmanship is evidently Burmese ornamental tattooing. The pose in the various figures and their execution indicate great proficiency of the performers; and much regret was felt that this skin might be injured by the ultimate effects of his malady. The proposition to avert such a mishap by making him the subject of lethal experimentation was not adopted. When last seen he was meditating a tour exhibition.

The following paper was read by the author:—

A SHORT ACCOUNT of the HILL TRIBES of NORTH ARACAN. By R. F. ST. ANDREW ST. JOHN, Assistant Commissioner of British Burma.

THE following notes were taken during a sojourn of only eighteen (1870-71) months amongst the Hill tribes of North Aracan, and spent in their supervision as magistrate and collector, and are, therefore, not so full as they might be, yet, though these and similar tribes have been already described by Sir Arthur Playre, in the "Journal of the Bengal Asiatic Society," and Captain Lewin, the Deputy-Commissioner of the Chittagong hill tracts, in his book "The Wild Races of the South-Eastern Frontier of India," I think that there are several points which have not been touched on by either which may be of interest to ethnologists; and, moreover, the late Loo-shay war has shown that, in order to ensure a lasting peace and immunity from their depredations, a close study of their manners and customs is absolutely necessary to a sound understanding of the difficulty. A difficulty which, from being shunned, has at last ended in a large expenditure of money with a still imperfect result. I do not mean altogether to deprecate the use of force, for in many cases this is the only argument that convinces certain portions of the human race, but I am of opinion that oftentimes a seasonable show of power and determination is quite sufficient, and obviates the necessity of resorting to measures to which humanity is averse.

The tribes herein treated of are located in a large tract of hilly country lying between the 21st and 22nd degrees of north latitude and 93rd and 94th east longitude, and drained by the Kulah-dan and Lay-mro rivers with their affluents. A survey party has been as far north as about 21½ deg. north latitude; but the sources of the Kulah-dan which flows into the sea at Akyab are as yet unknown, unless they have been discovered by the surveyors of the late expedition. The classical name of the Kulahdan is Gittshabā, but the Hkamies call it Yam-pang.

The tribes inhabiting this hilly tract of country are—1, the Rakhaing or Chyoung-thah ; 2, Shandoo ; 3, Hkämie, commonly called Hkway-mie ; 4, Mro ; 5, Anu, or Hkoun-g-tso ; 6, Chin, or Hkyn ; 7, Chaw.

The Rakhaing, commonly called Chyoung-thah (*i.e.*, children of, or dwellers near, the stream), are of the Burmese or Mran-ma stock, and speak a dialect differing but little from the dialect commonly spoken in the lowlands of Aracan. They are divided into clans, or families, each having a separate name, some of whom trace their origin to Peguans who were sent over with a Peguan princess who was married to an Aracanese king. Though their manners and customs are similar to those of the Burmese in general, and they profess themselves to be Buddhists, yet long contact with the wilder hill tribes has caused them to adopt many of their customs and superstitions. Formerly their villages were pushed far up the Kulah-dan, or Git-shabā river, but the pressure of the tribes above has of late years driven them in. The name Mran-ma is applied to the Chyoung-thah, Aracanese, and Burmese, and is, I firmly believe, the original name of the race. Sir Arthur Phayre has already in the "Journal of the Ethnological Society," vol. v, expressed his opinion that the name is a modern corruption of the Pali Brāmāh or Brāhma ; but with all due deference to such a great authority, I must say that I cannot understand how Brāmāh or Brāh-ma can be corrupted into Mran-ma, though the reverse is easy. Besides the Burmese are known to the Chinese as "Mreen," or "Mien," and to the Shans as "Man," both very like Mran, and it is well-known that the termination "ma" (feminine) denotes chief or parent. They are a quiet, pleasant people, in disposition more like the Burmese than their nearer relations the proud, indolent, overbearing Aracanese, who seem to have received a large admixture of foreign blood. Their dress consists of a "dolyah," or waist-cloth of dark homespun cotton, and a white cotton "goung-boung," or turban, the long hair being tied in a knot on the top of the head. I believe it will generally be found that this way of fastening the hair is one great mark of difference between Burmese and Indian Hill tribes. The women wear a dress similar to the Aracanese, which is the same as that worn by the Burmese, save that it comes further round the body so as not to expose the leg in walking ; the colours, however, are sad, and throughout the whole Aracanese family there seems to be a want of appreciation of the harmonious blending of bright colours so dear to the Eastern Burmese eye. It has often been stated that this peculiar dress was introduced amongst the Eastern Burmese in order to put an end to certain disgusting practices, but I do not believe that there are any good

grounds for this assertion, and that the present dress is merely an enlarged form of the old dress worn by the Mranma before they advanced in civilisation, and which is still worn by their wild cousins. Tattooing is practised, but not to such an extent as in Burma proper, the utmost being a few charms on the back, chest, or shoulders. The Burmese practice of tattooing the thighs has also been attributed to the above-mentioned practice, but I think a more rational reason is, that when the Burmese males took to wearing a long waist-cloth, the unexposed parts did not turn so brown as those exposed, and this light skin being unsightly when the loins were girt up, tattooing was introduced to enhance their personal appearance. The written character used by the Chyong-thahs is the same as that used all over Burma, but that of their books slightly differs, as the original Burmese books were for a long time copied by Bengali scribes who were ignorant of the language, and introduced new forms.

The next tribe on the list is the Shan-doo, but of their manners and customs very little is yet known. Major Tickell in 1852 had an interview (described in the "Bengal Asiatic Society's Journal") with one Leb-bai, the chief of a clan called Bouk-kie. In appearance they differ but little from the Hka-mie and Chin tribes, but their language or dialect is not understood by either, though there a few words common to both. On comparing the account of this tribe by Captain Lewin in his "Wild Races of the South-eastern Frontier of India," with that given by Major Tickell and my own observations, the only points in common are that they frequently use timber in building their houses, whereas other tribes use bamboos, that they are polygamous, that they had a dread of water above knee-deep, and that they bury their dead in graves dug in the village, together with their valuables, instead of burning them after the manner of the other tribes and the Burmese. Captain Lewin states that "their features do not bear any signs of Mongolian physiognomy, and Major Tickell remarks this of one specimen only; those, however, which I have come across were decidedly Mongolian in feature. The women are far better clad than those of the other tribes, and are said to be much handsomer. It was to have been hoped that the late expedition against the Looshays would have afforded more information regarding this almost unknown tribe, but, as far as I have heard, the column never penetrated to it, which is much to be deplored on another account, as they are inveterate raiders, and hold many of our fellow subjects captive.

The Hkã-mies, or, as they are more commonly called, the Hkway-mies, are the principal tribe of those under British protection, though not so numerous as the Chins. Three or four generations ago this tribe dwelt further to the north-east in the

country now occupied by the Shandoos, but have been driven southwards by them, in turn displacing the Mros and Chyoung-thahs. They are divided, like all the hill peoples, into clans, which doubtless in their former habitat had their own peculiar lands, and were each ruled by influential chiefs, but their forced migration has now destroyed all this, and the clans are scattered and confused, though keeping together for the most part in clan villages, under a head man or "a-raing," whose office is usually hereditary. The name Hkämie is the one by which they call themselves, and means "man" (*homo*). From features, language, and manners I consider that they are of the same family or nearly related to the Mran-ma, as are also the Mros, who differ but slightly in language and customs. The dress of the male Hkämies is a long home-spun cotton cloth, about one foot in width, which is passed several times round the waist and once between the legs, the coloured ends hanging down in front and behind; the hair is knotted over the front part of the head, and a long twisted white cloth is bound round the head so as to make a turban standing well up over the forehead. This adds to the height and sets them off to great advantage; they are generally well set up and muscular, but vary greatly in stature; though wary and occasionally deceitful, I have always found that to be honest and straightforward is the best way to get on with them—their distrust is the result of their dealings with people whom they know deceive them, and if once convinced that you will keep your word, they will always trust you. Generally speaking, I think they are more open to improvement than any of the other tribes, not even excepting the Chyoung-thahs; there can be no doubt but that they are more fully able to understand the benefits of peace and trade, and are desirous of changing their former predatory habits. This seems to be a universal law with regard to people who have been driven to change their habitat. The Mros wear a small blue waist-cloth, about four inches wide, and are not particular about their head-dress or personal appearances; their houses, too, are small; the desire for improvement is not so great. The women of both dress almost exactly alike, in a short dark blue cloth reaching to the knee and open at the side; it is fastened round the waist with a net of cords covered either with large beads or copper rings; over the breast is also worn a small strip of cloth. They are more squarely built than the men, and the habit of carrying very heavy weights on their backs in baskets with a band passing over their forehead up the precipitous hill paths makes them walk with a constrained and waddling gait; some when young are good-looking, but constant labour soon destroys their personal appearance. The last remarks are true of all the Hill tribes.

The Anus or Hkountsos and Kôngs are tribes not much known. Their dress and customs are said to be similar to those of the Hkāmies, but they speak a distinct dialect which contains many words and expressions intelligible to the Manipooreans.

The Chins are the most widely spread of all the tribes, and inhabit the mountain range that divides Aracan from Burma (*i.e.* Ava and Pegu) extending from far north almost down to Cape Negrais; though all acknowledge that they are of the same family, and universally tatoo the faces of their women—a practice peculiar to the tribe—yet there is a great difference between the dialect of those who are brought captive from the east side and that of those inhabiting the Arakan Hills. Generally speaking, they are very shy and averse to improvement, cultivating neither cotton nor tobacco for sale. They are divided into numerous clans, each of which is located on certain tracts sufficiently large to supply them with cultivation, but whose boundaries they are never allowed by clan law to exceed. It has been said that they adopted the custom of tatooing the women's faces in order to prevent the Burmese kings from carrying off the pretty ones to their harems; this explanation, however, is highly improbable; the most likely reason is that it was adopted as a mark whereby they might be recognised when carried off by other tribes, or perhaps to enable them the better to conceal the women of other tribes captured by them. Their language, though not understood by either Hkāmies or Mros, has many words in common. The men knot their hair more over the forehead, and the waist-cloth is reduced to the smallest dimensions; in fact, it can hardly be said to have the slightest pretensions to decency. The women wear a short waist-cloth, open on both sides like an apron before and behind, and a short smock; some clans, however, wear it long.

The Chaws consist of only a few families in a single village, and are undoubtedly of the Kookie race, but it is not known how they became separated from the main body. The men knot their hair behind, and the women plait it into tails which are brought up over the forehead. Having now mentioned the various tribes and a few of their characteristics, I will proceed to give a general sketch of their manners and customs, for, though there may be a few minor differences, yet, on the whole, one account will suffice for all.

The religion of all these tribes is spirit-worship of the most primitive kind (the Chyongthals excepted), and simply consists in a sacrifice—usually of blood—to the spirits of the rivers and fells as a means of averting evil; and the performance of almost every act has to be accompanied with the shedding of the blood of some animal or bird. The word Kā-nie is used by the

Hkāmies to represent a spirit or dryad, also the sun and day; a spirit or kǎ-nie is supposed to reside in almost everything. The last part of the word kǎ-nie is identical with the Burmese “nāy”, sun or day, pronounced by the Aracanese “nie”; the “ka” being pronounced quickly, was soon lost, but I think may still be detected in the Burmese, “ta-nin-ga-nway”, day of the sun, as compared with “ta-nin-la”, day of the moon, when “la” undoubtedly means moon. During the year there are two very important ceremonies for the propitiation of the Kǎ-nie, viz., at the time of sowing seed, and before harvest. At the first a fowl or pig is taken alive to the place to be sown; a small heap of rice-seed is placed on the ground, and the blood of the animal poured thereon; the flesh is taken home and eaten. The second is performed when the rice-plant is well-grown, but before the ear has come; a fowl, pig, or dog is killed at home, the blood smeared on long bamboos, decorated by shaving round the joints, so as to leave tassels and tufts hanging from them. These bamboos are taken and stuck up in various parts of the field. There is also another important annual feast, not in honour of the Kǎ-nie, but of the departed spirits called “hpa-law”; this ceremony is performed by the Hkāmies and Chyounghahs, but not by the Mros. It is held by the Hkāmies after harvest, and called “ta-proung-pa-oung,” or “the opening of the house of the dead.” When a person dies, and has been burnt, the ashes are collected and placed in a small house in the forest, together with his spear or gun, which has first been broken in pieces. These small houses are generally placed in groups near a village, and are sometimes large enough to be mistaken for one. After harvest the whole of the deceased’s relatives cook various kinds of food, and take them, with pots of “a-moo”, or liquor made from fermented rice, to the village of the departed; the doors of the houses are opened, and food having been placed inside, are reclosed; the relatives then weep, eat, drink, and return home.

The Chyounghahs perform this ceremony thrice a year, but it simply consists in setting aside food and drink for the departed for a short time, and then throwing it away.

During the dry season numerous feasts are given, at which large numbers of cattle are killed and eaten, and rice-beer and spirits consumed. It is a mark of distinction to be able to have it said that they have killed so many head of cattle at a feast. The largest number I ever heard of was one hundred and fifty. The gayals, oxen, and buffaloes are tied up to a post and speared, but other animals have their throats cut. Dogs are often castrated when young for use at these feasts. The post used by the Mros is shaped like a Y, and just below the fork carved so as to represent two or more breasts. There is some peculiar

signification attached to this symbol, both by the Mros and Hka-mies, and it may often be seen carved on the posts of the headmen's houses, and on the house-ladder. The true meaning I never could get; the usual answer being, "It is the custom inherited from our forefathers." The Hkamies and Chins, however, do not carve their posts, but set them up in the rough; in the Chin villages I have sometimes seen stones set up on end.

At the feasts there is always a great drinking of rice-beer. This is made by cooking rice in a large pot, with certain ferment-causing roots; when required for use this pot is brought out, and filled up to the brim with water, and a reed, with two small holes cut at the sides just above the bottom joint, thrust down into the rice; the drinkers suck up the liquor through this tube, and when the first man has done he fills up, and the pot is passed on to the others in succession. One pot is sufficient for a large number of men. Sometimes five or six pots are placed in a row, and the drinkers have to begin at one end, and go down the line to the other. This rice-beer is not disagreeable, and moderately intoxicating.

The dances which take place at these feasts are very peculiar, but must be seen to be clearly understood. The movement is more of a side-closing step, the body being kept in a position resembling the "Grecian bend"; the line is headed by players on drums, small gongs, and a wind instrument formed by passing a long bamboo through a hollow gourd; after these come men armed with spears, muskets, choppers, and shields. The young men generally commence the dance, and then drag the girls in between them; the whole line thus formed slowly closing round and round the animal to be speared, whilst the men make love to the girls by their sides. Before commencing a feast the faces of all are usually smeared with a mixture of saffron and rice-flour, which is supposed to keep off the bad effects of drinking.

Sometimes a wild sort of war dance is executed with swords and shields; and there is also a rather clever dance, something like the Scotch sword dance, but between two long heavy rice pestles, which are clapped together by two men to the sound of a drum; if the dancer be not very agile or exact, he is liable to get his leg broken between the two pestles.

Till marriage the intercourse between the sexes is unrestrained, and it is considered rather a good thing to marry a girl in the family-way, even though by another man; if, however, a girl has a child before marriage, it is exposed in the forest. Not to be sought after by the young men is considered a reproach. After marriage, however, which is a simple contract, unaccompanied by ceremony, conjugal fidelity is generally respected. A wife is purchased from her father with large presents.

The ceremony of “ya”, or taboo, is strictly enforced on the following occasions: firstly, when any person belonging to the village is killed by a tiger, alligator, or other animal, or when any woman of the village dies in child-birth, or when the body of any person who has died as above has been brought into the village, all intercourse with that village is cut off until the appearance of the next new moon; secondly, when a village or house is burnt, or when a new village is erected, intercourse is forbidden for the period of three days; thirdly, when any epidemic breaks out intercourse is forbidden with that village until the disease has disappeared; fourthly, when the rice-plant is well up, and requires weeding, intercourse is forbidden for seven days; fifthly, when a villager dies by accident, intercourse is forbidden for a day. Any person breaking the taboo is fined by the head men of the neighbouring villages. To show that a village is tabooed strings or canes are suspended across the road.

At harvest time the people are forbidden to eat flesh or fish; and any person who has killed another, or been wounded by a wild beast, is obliged to abstain from flesh for a period extending from three months to one year. It is also considered wrong to take money as a reward for the slaughter of a dangerous wild beast.

When the inhabitants of a village have been successful on a foray, or in repelling an attack, a sacrifice is offered to the “kă-nie” of the village, all dancing a war-dance, with spears and shields, round the village post. When a person dies the body is laid out in the house, and a feast made; food is set apart for the ghost, which is supposed to remain over the house as long as the body is there. Seven packets of rice for a man, and six for a woman, are left at the place of cremation for the ghost to eat, and neglect of this custom is a bar to inheritance.

According to Hill custom, all offences or injuries are remedied by fine only, and this fine is commonly called “the price of a head.” This price is most rigorously demanded, and has become the source of constant warfare. If the fine be not paid, means are first taken to endeavour to recover by capturing and enslaving the debtor. If however, this be not possible, the creditor will bide his time, and at an unexpected moment, together with his friends, attack and kill or carry off the debtor’s fellow villagers. This blood-money is often demanded on very imaginary grounds, and the feuds are kept up for years. The following are the laws usually adhered to:

Criminal.—1. If a person commit murder, he should be fined the value of two slaves and several spears, swords, and gongs—say in all about Rs. 600. If death be caused accidentally the

fine should be half the above. 2. When a village is plundered by a body of raiders the leader is alone to be held responsible ; and, if apprehended, is bound to return the value of all property taken (including persons killed), and also a fine. 3. If a village be burnt down in committing a raid, the leader is bound to make good the damage done and pay a fine in addition. 4. A person who commits theft is bound to return the property or its value and pay a fine not exceeding Rs. 30. 5. A person who causes grievous hurt may be fined Rs. 100. 6. If a person assault another he is to pay a fine not exceeding Rs. 30. 8. If rape be committed on a married woman the husband is entitled to demand a sum not exceeding Rs. 60. Rape of an unmarried woman is to be punished by a fine not exceeding Rs. 30.

NOTE.—All the above fines are to be accompanied by the cost of the animal (pig) slain to make the agreement binding. When murder is committed in a raid, any raiders caught red-handed are at once beheaded and the heads stuck up in the village. A woman may not receive a fine, but a male relative or husband may receive it for her.

Civil.—1. If two persons dispute about a debt or other matter, and neither can produce evidence, they are obliged to go through the ordeal of ducking the head in water, decision is given in favour of him who keeps under longest. 2. If a debt be not paid, and the debtor should not be apprehended, the creditor's party, if strong enough, attack the debtor's village and carry off as many captives as they can. 3. The rate of interest on a debt is double the principal if one year be allowed to expire from date of contraction. 4. The debts of the father must be paid by the sons. 5. If a man die without male issue, his property is claimed by his nearest male relative ; he, therefore, is responsible for the debts of deceased, whether there be property or not. 6. Should a man die leaving a son who is a minor, the nearest male relation acts as guardian until minority ceases, or marriage, when he is bound to give an account of his stewardship. 7. A woman cannot inherit, and is, therefore, not responsible for debts. 8. If a man die leaving two or more sons, the property is divided as follows:—Two divide equally. If there be more than two, the eldest and youngest take two shares each, and the others one share each. 9. On the death of the father, the eldest son must give his maternal uncle a full grown buffalo, or the value. On the death of the mother, the youngest son must give his paternal uncle a full grown buffalo, or the value. Can this not be done, a son should be given. 10. If a man be on the point of death and cannot pay his debt, he will leave a son to the creditor to work it off. 11. Slaves do not inherit unless adopted according to rule ; in this case they will be held responsible for debts. 12.

If a slave, however, be adopted by a master who has sons he cannot inherit. 13. There is no fixed age for marriage, nor is any constraint used to influence choice. 14. Marriage is contracted on consent of the woman's parents, after payment of the fixed dowry by the suitor. 15. If a husband wish to divorce his wife, he may do so and take all the children, but in so doing he will forfeit claim to dowry. 16. If a woman have children by a former husband, she is entitled to them on divorce. 17. A divorced woman must be supported by the male relative who received her dowry or his heir until remarried. 18. No female can receive dowry, it must be received by the nearest male relative. 19. If a husband chastise or ill-treat his wife and she absconds in consequence, he is nevertheless entitled to receive back the dowry. 20. If a wife abuse or ill-treat her husband he may chastise her, but if on that account he divorce her, he forfeits claim to dowry. 21. If the husband divorce the wife for adultery he is entitled to receive the dowry, and may also demand a sum equal to it from the adulterer in addition to fine and costs. 22. If a man commit adultery the wife has no redress. 23. Should a woman die in giving birth to a child before marriage, the reputed father must pay her value to her nearest male relative.

An oath is usually taken by swearing to speak to truth whilst a musket, sword, spear, tiger's tusk, crocodile's tooth, and stone hatchet (occasionally found and supposed to be a thunder bolt) are held in the hand. Some tribes of Chins consider that the most binding oath is taken by dipping a cup into the water of a running stream once with and once against the current. These oaths, however, are not very binding, for the Hill people fancy that they can even deceive the spirits.

Cultivation is of the simplest character, and merely consists in selecting a suitable spot on the side of a hill and clearing it by cutting down the underwood early in April. Shortly afterwards this is set fire to and immediately sown broadcast with rice seed; cotton and sesamum are also scattered on the same ground. The only implements used are an iron chopper about twelve inches long and three inches broad at the head (this broad end is also used for digging), and a primitive axe which is simply an isosceles triangle of soft iron run through a bamboo handle. In August the rice ripens, and the family, choosing a sunny day, repair to the field with a basket some four or five feet in diameter; the women and children reap the ears with rough jagged sickles and carry them to a man, who tramples out the grain in the basket; it is then taken home and dried in the sun, or, if the weather will not admit, over fires.

Cotton cultivation has of late years been much increased, and

the people begin to understand its value as an article of commerce.

Tobacco is much cultivated on the banks of the Kulah-dan river, and is of a far better quality than that grown in other parts of Burma. It is sown broadcast on the mud banks as soon as the waters begin to subside after the rains, in November, the long elephant grass having first been cut and burnt. The young plants are not transplanted, but well weeded and thinned out. When the plants are about two feet high the top shoots and lower leaves are pinched off to make the good leaves grow larger, and in April and May the leaves are picked and hung up to dry. The tobacco is never dried by exposure to the sun, and is kept till the rains for sorting, so that the leaves may be pliant. I have not been able to ascertain whence this plant was introduced, but the Hkämies and Chins call it "sarak," "sarok," and "see-ruet," which are evidently corruptions of the Aracanese "see-ruak," a tobacco leaf. The Shandoos, however, call it "omah," which may be a corruption of the Hindustanee "tumaco."

The women do most of the cultivation with the exception of cutting the jungle.

To the people who live there, the climate of these hills appears to be very healthy, but to Europeans and lowlanders conducive of very severe fever. Many, after the first few attacks, become acclimatised, but on returning to the lowlands are liable to a return of it. Burmese and natives of India seem to suffer more than Europeans; the most dangerous months are April, May, and June, when the rains commence. The pleasantest time of the year is from 1st November to the 31st of March; about Christmas time the nights are cold, but frost is unknown.

The usual weapons are muskets, spears, short swords, knives, and shields; short bows and cross-bows, with poisoned arrows, are sometimes met with. The muskets are all European, obtained from the traders of Aracan and Chittagong. Powder is home-made, and not very strong. Spears are of different shapes, but generally short in the shaft, and with a long iron foot. The shields of the Shandoos and Hkamies are of buffalo hide and similar in shape, being about two feet long, eighteen inches in width at the top, and fourteen inches at the bottom; the centre is slightly bossed, and there is a double handle inside to grasp it by. A Shan-doo chief's shield is usually ornamented with four rows of small brass plates on the upper half, and from the lower row hang coloured tufts of long goat's hair. The second in command of a war party, or chief's son, has one large brass plate in the centre of the shield, about ten inches in diameter. The spears used by the Chins are very long and heavy, and their buffalo-hide shields are longer, and rounded to cover the body, like the Roman shields; they have only one handle and no ornaments.

From the Aracanese histories, which, like all Burmese records, are, as far as pre-historic times are concerned, a mixture of tradition and romance, worked up with a view to fabricating for the early kings a fabulous descent from the solar race of India, and also introducing the imaginary tour of Gaudama Buddha through their countries, very little is to be gained in the way of reliable information. The first Buddhist monks apparently pursued the same course as the Brahmans in Manipoor, where, after converting tribes of a similar description, they made out a fabulous connection between them and the heroes of the Mahā-bhārata. From the fact, however, that the Burmese admit that these tribes are related to them, and from frequent reference in their traditions to fabled immigrations, *viâ* the Kulah-dan Valley, and stories of Bee-loos (the Burmese equivalent to Rakshas), it would seem that in remote ages a great Mongolian horde, consisting of several tribes passing southwards from Thibet, became divided in the Manipoor Valley; the one proceeding down the Kyin-dwin Valley peopled Upper Burma; whilst the others, proceeding down the Valley of the Kulahdan, drove before them an ugly aboriginal race, similar to the Yakkos of Ceylon, or the present Andamanese. It is said that Aracan derives its proper name, Ra-caing, from the fact that there were Bee-loos in it; but as the Burmese never allude to the present hill people as Bee-loos, a very different race must have been thus denominated. As soon as the heads of this column became checked in their onward progress by the sea a reaction would naturally set in, resulting in the improvement of those who held the plains and the isolation of smaller families in the hills, which, by the process of isolation and want of a written language, would soon result in separate and unintelligible dialects. That these dialects are more like one another and the Burmese than is at first apparent, is proved by the number of words in common, words, too, which could not be borrowed—"ane" (or "eim," as some write it) is "house" both in Burmese and all the dialects, and so also is "lam" or "lan," a road. But owing to an arbitrary rule in Burmese spelling, which requires a final *m* to be pronounced like *n*, the Burmese say "lan" and "ane," though they write "lam" and "ame;" and the illiterate hill men say "lam" and "ame" according to the original language. In the comparison of dialects, too great reliance must not be placed on vocabularies; idiom and construction are far better guides. As an instance of similarity not made apparent by a vocabulary, take the following:

ENGLISH.		BURMESE.		HKA-MIE.
Come	.....	lah	.....	youk.
Go	.....	thwa	.....	sait.

Now, both "youk" and "saik" mean "to arrive" in Burmese. As regards construction, it will be seen that in the Hkamie and Burmese (both monosyllabic) the words run in the same order, but on comparing the Shan or Thai with Burmese, it will be found that the order of the words is reversed; in Hka-mie and Burmese the order would be "rice-eat-wish," but in Shan "wish-eat-rice," when saying "I want to eat rice."

The houses of all these tribes are built of bamboo on bamboo or wooden posts; those of the Hkă-mies are decidedly better and larger. The Hkă-mie house is usually raised five or six feet from the ground, and about three fathoms broad, and five or six in length. The interior is one large hall, with a fire-place at each end; the walls are double, and made of split bamboo, woven like a mat. This sort of wall is common to the Burmese and other races; but the Hka-mies, instead of weaving them on the ground and fixing them up afterwards, invariably weave them *in situ*. At one end a door leads through a small vestibule for holding water-bottles to the interior of the house, and at the other end is another door leading out on to a raised open platform. On the central post of the house are fixed the skulls of animals killed at feasts, and over the outside door are placed the skulls of animals killed in the chase. The floor is also of woven bamboo; and the roof, which is round and brought more down at the corners, is thatched with grass, or bamboo leaves, over a bamboo matting. Between the double walls is a place for the fowls, and below are the piggeries. The Chyoungh-thah and Mro houses are also of bamboo, but not nearly so large; and the Mros always make the wall next the fire-place of whole bamboos, in order that the smoke may escape better. Many of the Chins build their houses rather larger at the top, so that the walls lean outwards, like those of a sarcophagus. The Hkamies, however, are the only tribe that make a rounded roof; the others all have a ridge with gable ends. The only difference in a Chin house is that the floor is made of split bamboos laid side by side, without interweaving. The villages are usually perched on a height, and where the ground will admit, arranged in a rough circle, with the slaughter-post in the centre; one or two of the larger houses have guest-chambers attached, but under a separate roof. Sometimes there is a rest-house in the centre of the village.

The only arts practised are those of weaving cotton cloths and baskets. The blankets made by the Hka-mies are generally white, and have thick ribs of cotton run in to make them warm; some are like large Turkish towels. The Mros generally weave their wrappers in black and white, showing the pattern on one side only. The Chins, however, weave them in broad-coloured stripes. No frame is used, but the web is fastened to a post,

whilst the end to be worked at is fastened to a broad strap passing round the body of the weaver. A large kind of earthen jar, something like a Roman amphora, is made by the Chins; in order to make them stand upright, they have to be fitted into a cane-work stand, which also serves as a handle.

In decorative art these tribes seem to be very deficient, though the Hkamies sometimes ornament their door-posts with patterns drawn in soot. Very handsomely-inlaid powder-horns are purchased from, and said to be made by, the Shan-doo, but they may have got them from the Shans of Kalay, or the Yaws in Upper Burma.

DISCUSSION.

Sir ARTHUR PHAYRE observed that he had listened with deep interest to the account given of the hill tribes of Northern Arakan. Long and familiar intercourse with those tribes enabled him to speak to the accuracy with which they had now been described. It was curious to consider that beyond the tribes mentioned were others of the same Indo-Chinese race, who, though little more than one hundred and fifty miles from our principal station in Arakan, were now as little known to the rest of the world as the tribes of Southern Africa were before the days of Livingstone and other recent travellers. It was to be hoped that Mr. St. John, on his return to that country, would, under the patronage of this Society, be able to visit and describe them as fully and lucidly as he had described the nearer tribes. With reference to an observation that had been made, Sir A. Phayre further remarked: In regard to the name of the people called by Europeans Burma, or Birman, it appears to be a corruption of the native word, and that I believe is derived as follows: The name given in the Buddhist Scriptures to the first inhabitants of the earth, who were celestial beings superior to man, as he is at present, is *Brahmá*. When the Buddhist missionaries from India penetrated into the valley of the northern Irrawaddy, some 2,500 years ago, they found there numerous wild tribes very similar in character and appearance to those Mr. St. John has described this evening. In process of time the missionaries instructed and converted those tribes, who were gradually formed into a nation, and probably under a king of Indian race. It was then that the national name of *Brahmá* was assumed, and the various tribal names gradually disappeared. The word *Brahmá* was and is now written in the Burmese alphabet *Mram-ma*, or *Mran-ma*; but in speaking is almost always softened to *Ba-má*. The letters *B* and *M* are used interchangeably in the vernacular languages of India and of Burma; and this appears to me to account for the written form of the word, differing as regards the initial letter, both from the original and the present ordinary-spoken form of the national name *Ba-má*. As to Arakan, that is the European form of the native name for the country, which is *Ra-Khaing*. That again is a native corruption of the word *Ráksha*, a Sanscrit or Pali word for monster. This name

was given by the Indian missionaries either to the unconverted inhabitants, or to a race of people supposed at one time to inhabit the coast, similar to the present Andaman Islanders. These, of course, have long disappeared, but the name remains.

Dr. CHARNOCK did not agree that the appellation Mran-ma is a corruption of Brahma; nor the reverse. The name may not be of native origin. It might be from the Thai or language of Siam, or one of the neighbouring languages. The name of the tribe was perhaps from that of a part of the country. In Anamitic, *miên* is rendered "regio," and *mên*, "regnum;" hence Cao-mên = Cambodice regnum. Further, the name of the district of Aracan or Racaing may be derived from the town, and the latter from its river; just as Aeng, in the same country, appears to have had its name from the river Aeng. The Anamitic word *rach* is rendered "rivus," and *kinh* "magnus;" so that the name Racaing may mean "great river." This *kinh* is another orthography of the Chinese *king*, great, lofty (figuratively a kingdom); hence Pih-king, Nan-king, Tun-king (Tonquin). But the appellation Mran-ma (in Chinese *Mreen* or *Mien*) is possibly from the Sanscrit. In the latter language *baran* or *varan* means "class" or "tribe;" and *ma*, "great;" and *mran* would easily corrupt from *ma-baran*. A great deal of Sanscrit is found not only in Siamese and Tibetan, and all over India, but even in Russian river names. That the tribes of North Aracan are an intelligent people seems to be proved by their knowledge of horticulture. They pinch off the tops of their tobacco plants, whereas those not acquainted with horticulture would probably shorten them with a knife. One of the names of the original inhabitants of Aracan is that of Magh or Mugh. Many of them dwell in Chitagong. One of their customs is peculiar. When a man wishes to raise money, he mortgages his wife until the debt is paid off, or only for a short period. He (Dr. Charnock) thought this an excellent arrangement, and had no doubt that if the custom were introduced into England, where there are quite eighty-five per cent. of ill-assorted marriages, there would be more business done in this line than on the Stock Exchange. The name Magh or Mugh is not a native name, but is probably derived from the Persian, in which language it has the various meanings of tavern-keeper, wine-drinker, fire-worshipper, pagan, lunatic, infidel. The latter signification seems to agree with the religion practised by the natives of Aracan. They are infidels to the Persians and many of the neighbouring peoples.

Mr. St. A. St. JOHN, in reply to a question on the upright stones, said when he went into the village all the inhabitants were out in the jungle, and he had no opportunity of finding out what they were erected for. He only observed this rough attempt at a circle in one village, but elsewhere he had occasionally seen single stones, which were said to have been set up in the same manner as a post to show the number of oxen that had been slaughtered, and were then set up simply because they were to hand.

The following papers were read by the Director.

THE AINOS: ABORIGINES OF YESO. By Commander H. C. ST. JOHN, R.N.

THIS strange race, inhabiting Yeso, Saghalien, and the southern of the Kurile Islands, are in Yeso and Kunashir entirely under subjection to the Japanese, and are made use of in hunting, fishing, and collecting seaweed. In the interior of Yeso they must be freer and more independent, as the Japanese are at present content with settling along the coast, and know little or nothing of other parts of the island. The Ainos naturally prefer the coasts, food being much more certain and more easily procured.

According to the Japanese, there are ten thousand Ainos in Yeso alone. This I think is greatly in exaggeration of their real numbers. From what information I could gain, it would appear the race is decreasing. They live quite distinct from the Japanese, having a separate village, as it were, in the same settlement. The Japanese look down upon them, and despise them, talk of them as quite inferior beings, and have no nearer connection with them than is necessary between masters and slaves. The Ainos are below the middle statue, the men averaging five feet two inches to five feet four inches in height. Their frames are light and wiry, short muscular development being very rare. They are well proportioned and well knit together, showing no certain peculiarity or variety. The women are short; their average height is rather under five feet. Like the men, they are spare, stoutness being quite exceptional. They are capable of undergoing toil and exposure similar to the men, both sexes doing the same work.

The condition of the Ainos along the coast is materially altered and bettered by the introduction of rice as a part of their daily diet, supplied by the Japanese authorities at the different stations. The colour of their skin is dark; a copper colour, with an olive tint, or a dirty copper. There appears almost perfect uniformity in their colour, both in the north and south of the islands. Occasionally I noticed a man having a darker complexion than usual, but I never observed that variation among the women. The children varied only in having a clearer copper hue than the elder people. Their features are regular, good, and decidedly pleasing; entirely distinct from the Mongolian, having neither the high-cheeked bone, nor oblique upper eyelid peculiar to that race. Many have most intelligent faces. Their temples are flat; foreheads broad, square, and high. Arch of the head flat; entire head round and well shaped. Their lips are full, but not repulsively so. They resemble the European race, not alone in their features and general contour, but in their expression. Their



Figure 1

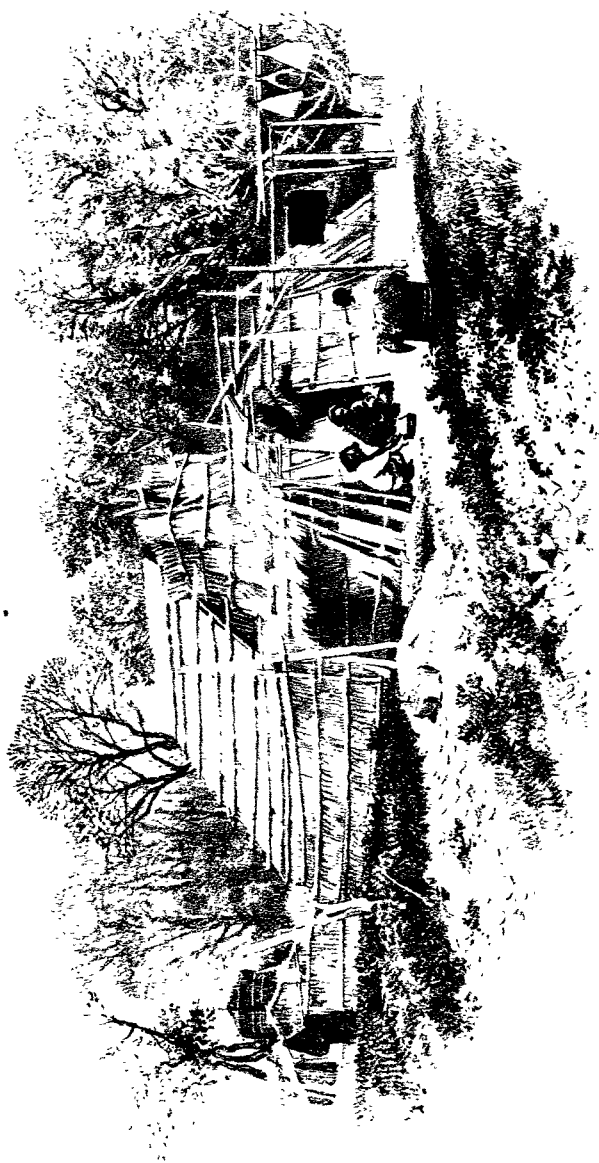




Amo Mon



Amo Gopi



Aino Hut.

eyes are universally very dark; eyebrows are straight and parallel to the axis of the orbits. The hair of this race is very characteristic. It is coarse, straight, and flowing, and invariably black; exists in the greatest profusion on the head of both sexes. The men wear long, flowing beards and moustache, their arms, breasts, legs, and entire body being almost invariably more or less hairy; frequently to an extraordinary degree—even in the children this is observable. Exceptional cases of hairy men occur in all races, but in this race the exception is to find a man not hairy.

The Ainos have not the appearance of possessing muscular strength. They are, as well as being low in stature, small in girth of body, light and wiry. The average life of this race must be of low standard, few reaching the age of fifty-five. The women age very soon; the exposed life they lead as children, the early age they marry and become mothers, and the continued hard life they lead afterwards, fishing, collecting wood and seaweed, at the same time performing their more particular duties attached to the rearing a numerous family, combined, very soon age the women. The children, as may be supposed, in early years become independent, taking care of the house and the smaller urchins during the absence of the parents. The women wear their hair long and shaggy, simply flung back on the head, and sometimes tied behind. Like their sex in other parts of the world, they have tastes and ideas regarding ornamentation. When it is procurable, they trim their simple robe of deer-skin, or coarse canvas, with blue cloth. They wear large massive ear-rings; some have hoops ornamented with bits of blue glass, which, worn as a coronet, they appear in on grand occasions. The regular Aino dress for both sexes is a single robe of deerskin, which reaches to the knee. This, tied round the waist, constitutes their dress. Besides the deer-skin robe, they manufacture from the inner layers of the birch bark a coarse kind of canvas. The men have no peculiarity in the way of tattooing or ornamentation. The women tattoo their face round the lips, carrying the mark out on the cheek to a fine point. This custom is commenced when they are small children, and constantly added to until they marry. The wife of a chief or head man wears a piece of string passed six times round the waist: The wives of the inferior men are only allowed to have three turns. The women also tattoo their wrists in rings, working from the hand up the arm to the elbow. The exact meaning of this custom I could not ascertain, but believe it is in connection with marking periods of time, or numerating something the number of which they wish to retain. They are a dirty people, hardly ever washing even their faces or hands. This being the custom during the summer, it may be concluded

that during winter they never attempt to wash. They are much addicted to skin disease, and in all small settlements several individuals may be seen entirely bald from this cause; probably the quantity of lime they smear over their heads when infected also helps to produce baldness.

The introduction of rice to their usual customary diet of flesh or fish has done much to ameliorate the prevalence of skin disease. I believe in Saghalien they suffer much more than in Yezo. Small-pox is known amongst them; when it appears the tribe immediately quit their sea-coast residence and disperse in the interior. This circumstance and other causes incline me to believe that small-pox is introduced by the Japanese, probably by junks. These two diseases appear the only type of sickness they suffer from. Their teeth are solid and good, and by their soundness invariably observed in their skulls, must also be lasting and generally free from decay. Fish is their staple food; rice and salki (sprouts) have both been introduced by the Japanese.

During the spring and summer a bulbous-rooted grass is collected and cured as a vegetable. This, if not the only native vegetable, is the most common one, and shows that previous to the introduction of rice the Ainos, like other rude and insulated races, valued excellent plants. Deer's meat, during winter, when fishing is precarious or entirely stopped by the weather, is the main food. The men at this season kill great quantities of deer for their horns alone, deer's horns being one of the few trade exports from Hakodadi. Not many years ago they were bought at that place for three dollars per one hundred and thirty-three pounds, and sold for forty dollars. At the present time the same quantity is bought at six dollars, and sold at nine.

The bow and arrow (poisoned) is their native and still principal weapon used. At some stations they use the Japanese matchlock. Dogs, the same species as found in Japan, are much used in hunting deer; and when snow lies thick and soft, numbers are killed with these animals alone. Their bow is short, about three feet in length; the arrows are not longer than twenty inches, tipped with a hard, cup-shaped piece of bamboo, bone, or iron. The cup or hollow contains the poison. This is prepared from the brains of crows, the ashes of tobacco, and two insects named by the Ainos, Yousiki and Krombi; the latter is a water insect, and is found attached to sticks or stones. These four ingredients, mixed together and allowed to become putrid, are then ready for use. This poison is so strong that a considerable portion of the flesh round the wound has to be cut away before the animal can be used as food. I think the poison more generally used is prepared from the deadly night-shade.

The Ainos are good-natured, kind, and obliging; they are

always willing to do anything they may be asked, appear glad to see a strange face amongst them, are neither rude nor inquisitive, and invariably in their peculiar way salute you. This is done by dropping on their knees, making a low obeisance, lifting both hands to a level with their head, stroking their long beards down, and letting them fall palms up on their knees. The women raise their hands and rub their upper lip under the nose with the forefinger of the right hand. At first, and until the fair sex became accustomed to the appearance of foreigners, they invariably covered their mouths with their hands, seemingly, it appeared, to hide the tattooing.

Altogether they are a happy, contented race. Their wants, of course, are nothing beyond food and clothing, and, to a certain extent, both these are found them as payment for labour, money being kept most scrupulously from them. The women, when paddling about, fishing, or picking up shells, often sing wild snatches of songs. The men always meet you with a smile, and the children invariably appear up to games. These and other traits shew their cares are few, and their spirits light.

Their dwellings are rude enough; grass matted over a rough square framework of poles, with poles again lashed across outside. These huts are usually about 15 or 20 feet long, by 10 or 12 in width; slope from the base to the top; have a square open hole at one end of the upper part to allow the smoke to escape, and generally a small opening lower down on the opposite side as a window. The door is always under the chimney end of the hut, and has a porch, or small outer chamber, with another door to it. In this compartment they keep their nets and such gear; their dogs also live here. In the centre of the large chamber is the fireplace. The inside of these rough dwellings is black from the constant wood fire; everything within is black; poles stretch across, on which hang the most extraordinary medley of things possible, fish, deer's meat, mocassins made of fish skin, robes, nets, and I know not what else. Close to every hut is a store-house of the same material and construction as the dwelling hut, raised 8 or 10 feet off the ground on poles. In these places they keep their winter store of fish and other food. They are raised from the ground to be clear of the snow, of dogs, foxes, and wolves.

Out of the birch bark they make many things. The outer bark is made into coverings for numerous articles; from the inner bark they make twine, and then fishing nets, and also, as previously mentioned, a kind of coarse canvas. Log canoes (the solid tree hollowed out) from 25 feet in length to all sizes under that, having sometimes boards lashed on either gunwale, are their description of boat. It can hardly be said they have

any certain burial ground ; sometimes one locality appears more used than another, but as a rule they dig a hole anywhere, and deposit the body in it. Neither do they appear to have the least respect or feeling connected with their departed friends, it being a common occurrence to find the hole scratched open, and skulls and bones scattered about ; wolves, foxes, and probably their own half-wild dogs do this, the Ainos looking upon it as a matter of course, or at any rate with indifference.

These people in a manner believe in spirits. There is the spirit of the sky, of the river, mountain, forest, fire, and the fishing spirit. To represent these several spirits, they have sticks pealed in different ways. The pealing is left on in curls. It depends on these curls, and on the particular part of the stick on which the curl is, which spirit it represents. Supposing the fishing spirit to be the one they wish to appease, the sticks representing him are stuck about the beach on their fishing grounds. They have no shrine or temple for their spirits either singly or collectively. In spring occasionally, it appears, they have bear hunts, killing the old bears and capturing the cubs. When the cubs are very small, they are handed over to the men's wives, who either bring them up by hand or suckle them, continuing the latter process until their teeth become disagreeably long. At some of the settlements I visited there were four or five young bears kept in large cages made of hard wood poles. In the autumn these animals are killed and eaten at the feast of bears, a ceremony held at that time.

The Ainos have no written language. In connection with the Japanese, a mixture of both is used. If an Aino wishes to be very explicit, particularly in a geographical view, such as explaining the course of a stream or the situation of a lake, he takes you to a soft patch of ground on the sand, and with a stick or his finger draws his ideas. The women of the tribe are greater adepts at this primitive literature, having been instructed by some old lady of the tribe in pattern drawing when children and girls. When old enough they work the different patterns learnt as children on their robes. There are some strange customs connected with the Ainos, related by the Japanese, which read (they are printed) more like fables than reality. Queer as they may be, I believe they are mainly true. A few I will give in as near an approach to the Japanese wording as is possible. The first evidently relates to the invasion of Yezo by the Japanese ; unfortunately, no date is given or obtainable in connection with the event, which is as follows :

“ A number of years ago a great battle was fought between the Japanese and the Ainos. The Japanese used matchlocks, the

Ainos bows and arrows ; of the former five were killed ; the Ainos buried their dead as fast as they fell, and retreated into the woods. There is a famous fish called the '*one boo*,' which is found only at one place, and there only in May, June, and October. Then this fish appears, and the Ainos begin to make raids after him. They commence by observing what is called in Japanese '*mon-ou-me*', the nearest interpretation to which, in English, besides being, strange as it seems, the best description, is the code of laws found in the eighteenth and other chapters of Leviticus. They must be very clean in their person." This alone must be an event of great importance and consideration to them. "If any of their family have lately died they won't fish. Supposing everything is propitious, and their preparations completed, they commence by keeping strict silence, even their women at home are prohibited from singing, and no musical instrument can be used. The hearing organs of this green fish are so acute that it appears he can detect the slightest musical note miles away, and disappears instantly. Having caught their fish and brought him home, he is passed quietly through the small opening at the end of the hut, and not by the door, if he did the other fish would certainly see him and disappear."

In Saghalien, the following strange funeral custom was observed until quite lately: "When the chief of a tribe or village died, his body was laid out on a table close to the door of his hut ; his entrails were then removed, and daily for twelve months his wife and daughters wash him thoroughly. He is allowed, or I should imagine supposed to dry in the sun ; the washing process being the only means used to cure him. At the end of the year his coffin, which has been in preparation all the time, is completed, and then if the body is cured, he is deposited therein, and laid on the ground. The wife and others are much commended by the tribe for their care and attention, and receive presents of tobacco, etc. But if, notwithstanding all their care and trouble, the body becomes putrified, then the wife is killed, and buried before her late husband is put out of the way. When women die they are buried at once, and a tomb placed over them." This is certainly not the case now, if it ever was before. Sorrow is supposed to be highly developed in the Aino race. When an individual of either sex dies in a family, the neighbours come and mourn with the survivors, and tears are always shed. If the name of a departed friend is mentioned, it is, however, considered an unpleasant subject of conversation, and avoided as much as possible. When a man dies within his house, or if any one dies suddenly opposite or close to a house, the house in either case is burnt.

Husbands are kind to their wives ; the duty of the wife appears to be to save the husband all the work she can by the

simple process of doing it herself. A successful or expert hunter or fisher sometimes keeps two wives. If a woman finds her husband an unsuccessful Nimrod she abandons him. Concubines are allowed, but do not reside in the same hut as the lawful wife. In Saghalien the men look after and keep in order the women's wardrobe. In Yezo it is *vice versa*.

The meeting of two friends after the absence of either for any length of time is peculiarly ceremonious. The one who has not been absent takes the other's hands in his and rubs them, weeps, and asks after his health. Not until this is gone through can business be transacted. Feasts are not unfrequent amongst the Ainos. As soon as the guests have assembled, and are seated on mats produced for the occasion, the host pours a little saki into his guests' cups; while he does so the guest salutes him by rubbing his hands together. The drinking sticks are presented with the saki. The guest now strokes his left-hand with his right, waves the stick round the cup, dips it into the saki, and throws a little over his head: this is the offering to the spirit. The host and guest again exchange compliments. The latter now holding his moustache up drinks one mouthful of saki, salutes his host, refills his cup, and proceeds through the same ceremony from beginning to end. The Japanese law is publicly read out every 15th of November. On that day a dance, called the crane dance, is performed by the girls of the settlement. The same dance takes place at the great fishing feast. Owls, for which birds these people have a kind of reverence, are frequently kept tamed. They believe that from the wisdom of this bird their ancestors were instructed how to obtain children. Eagles are found in all their settlements, and, as previously mentioned, bears. That they are excessively dirty in person I have mentioned. It is by no means uncommon to see a woman hunting among the shaggy locks of her daughter's profuse head of hair, and when successful devour the spoil then and there.

DISCUSSION.

MR. ST. A. ST. JOHN begged to draw attention to a similarity between the practices of the Ainos and the Hill tribes of North Aracan in the matter of spirit worship. When the Ainos wish to attract the special attention of the spirits, they erect sticks with shavings attached to them; the hill tribes do the same with long bamboo shoots. This has, with Burmese and Hindoos, been converted into flags and streamers.

INDIAN PICTURE WRITING *in* BRITISH GUIANA. By CHARLES B. BROWN, Esq.

WHILST engaged during the last few years upon the Geological Survey of British Guiana, I travelled in various directions

through that extensive colony, between the parallels of 1° and 8° north latitude, and the meridians of 56° and 61° west longitude. In the course of my travels I met with what are called "Indian Picture Writings" in several localities, of which I made careful drawings, and which I now submit for the purpose of examination by persons skilled in the interpretation of such matters, in the hope of enabling them to throw some light upon the history of the ancient inhabitants of that region.

These writings or markings are visible at a greater or less distance in proportion to the depth of the furrows. In some instances they are distinctly visible upon the rocks on the banks of the river at a distance of one hundred yards; in others they are so faint that they can only be seen in certain lights by reflected rays from their polished surfaces. They occur upon greenstone, granite, quartz-porphry, gneiss, and jasperous sandstone, both in a vertical and horizontal position, at various elevations above the water. Sometimes they can only be seen during the dry season, when the rivers are low, as in several instance on the Berbice and Cassikytyn rivers. In one instance, on the Corentyne river, the markings on the rock are so much above the level of the river when at its greatest height, that they could only have been made by erecting a staging against the face of the rock, unless the river was at the time much above its usual level. The widths of the furrows vary from half an inch to one inch, while the depth never exceeds one-fourth of an inch. Sometimes the markings are almost level with the surrounding surfaces, owing to the waste or degradation by atmospheric influences, which have acted with greater force upon the rough rock than on the polished face of the grooved markings. The furrows present the same weather-stained aspect as the rocks on which they are cut, and both the rocks and the furrows are in some instances coated with a thin layer of the oxides of iron and manganese. In their present worn condition it is hard to say with what kind of an instrument they were made. I am inclined to think that they were cut out roughly with a pointed iron tool, and afterwards smoothed by rubbing with a stone; several unfinished figures presenting that appearance. Or, perhaps, some may have been formed in that way, while others may have been produced entirely by rubbing with a stone or moist sand and a piece of wood. If they have been made with an iron instrument, the date of their formation must be subsequent to the neolithic age.

The Indians of Guiana know nothing about the picture writing by tradition. They scout the idea of their having been made by the hand of man, and ascribe them to the handiwork of the Makunaima, their great spirit. Nevertheless, they do not

regard them with any superstitious feelings, looking upon them merely as curiosities, which is the more extraordinary as there are numbers of large rocks without any markings on some rivers, which they will not even look at in passing, lest some calamity should overtake them. Their Peaimen or sorcerers always squeeze tobacco juice into their eyes on approaching these, but pay no regard to the sculptured rocks. In the Pacaraima mountains, between the villages of Mora and Itabay, the path passes through a circle of square stones* placed on one end, one of which has a carving upon it; some of these blocks have been thrown down and broken by the Indians, clearly proving their utter disregard for them. If then there were any traditions regarding these writings handed down from father to son, I conclude that the Indians of the present day—the most superstitious of beings—would undoubtedly treat them with awe and respect. Again, if their forefathers were as indolent as they now are, they never would have gone to the trouble of making these pictures merely for the purpose of passing away their time, which they could have more easily accomplished by lying in their hammocks from morning to night in a semi-dreamy sort of state, as their descendants do at present. As these figures were evidently cut with great care and at much labour by a former race of men, I conclude that they were made for some great purpose, probably a religious one, as some of the figures give indications of Phallic worship.

In connection with these picture writings I may here state, that on the Corentyne and Berbice rivers I observed at several places, on large masses of rock in situ, small circular saucer-shaped depressions, almost always accompanied by long polished furrows, which, in my opinion, are the places where the stone implements of the neolithic age, found in Guiana, were manufactured. These circular depressions are generally about six or seven inches in diameter, with a depth of one inch in the centre, and some were evidently produced by rubbing the axe-heads by the hand in polishing the sides and tops, whilst the long narrow furrows, about one foot in length and one a quarter inches in width and depth at the centre, terminating at each with a point, were produced in sharpening their edges. It might be supposed that all the saucer-shaped depressions were formed in the same manner as "pot holes," but this could not have been the case, as many of them are found on the smooth side of a sloping rock, and not on horizontal or depressed surfaces where pot holes can only be produced. None of these circular depressions and elongated furrows are found in the immediate vicinity of the picture writings.

* This circle of stones is very like that on Stanton Moor, shown in Fergusson's "*Rude Stone Monuments*".

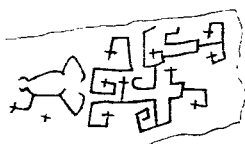
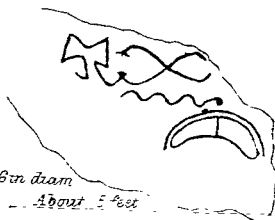


About 5 ft



6 in diam

About 5 feet



About 7 ft



1 foot

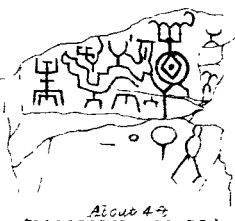
About 24 in.



About 2 1/2 in

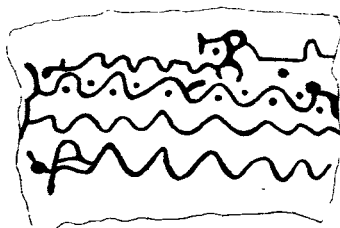


About 7 feet



About 4 ft

AT WARAPUTA CATARACT



About 4 feet

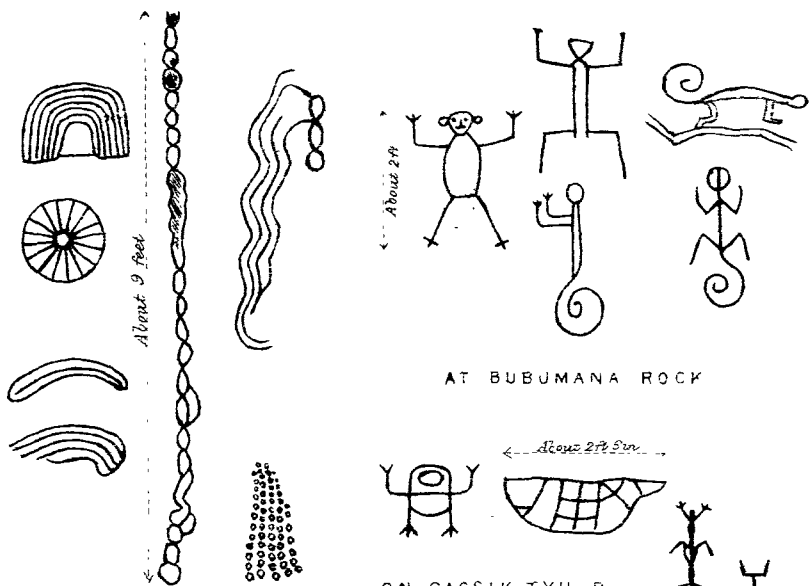
NEAR OUROPOCARI CATARACT



About 2 ft

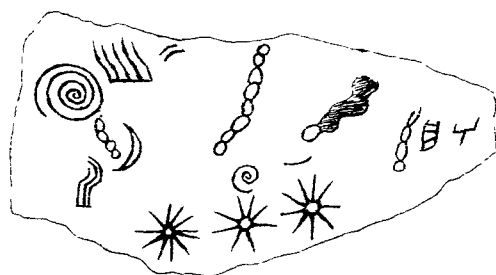


AT YAKARIMA ROCK



AT BUBUMANA ROCK

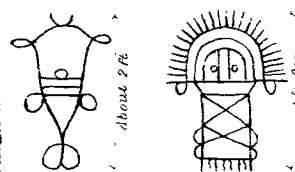
ON CASSIKITYU R.



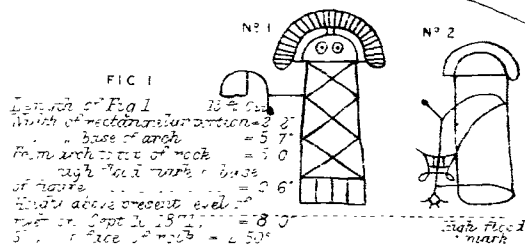
NEAR KARAKANANG V PACARAIMA MTS



AT WONOTOBO CATARACTS

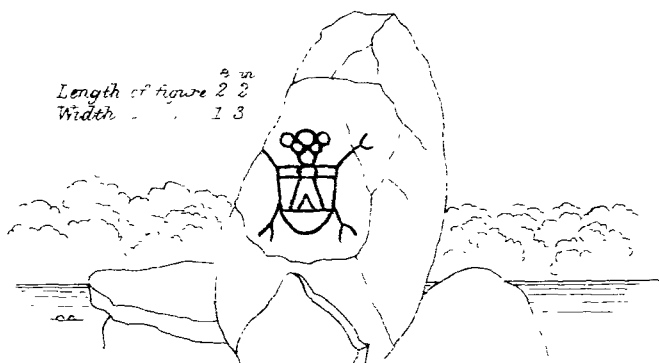


NEAR ARATIPU CATARACT

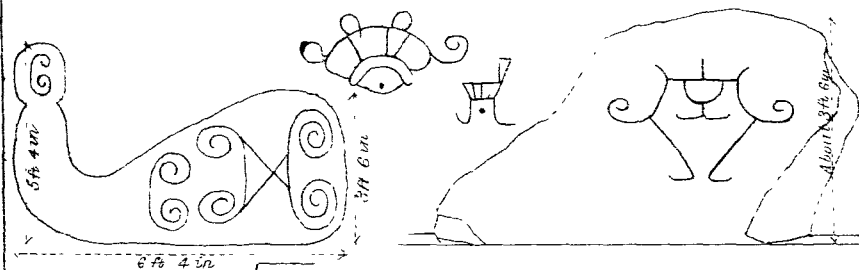


ON TEMEHRI OR DURABAKI ROCK

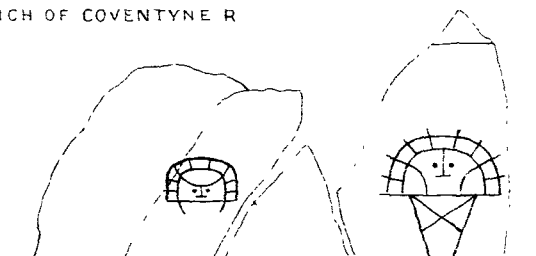
Length of figure $\frac{3}{4}$ in
2 2
Width 1 3



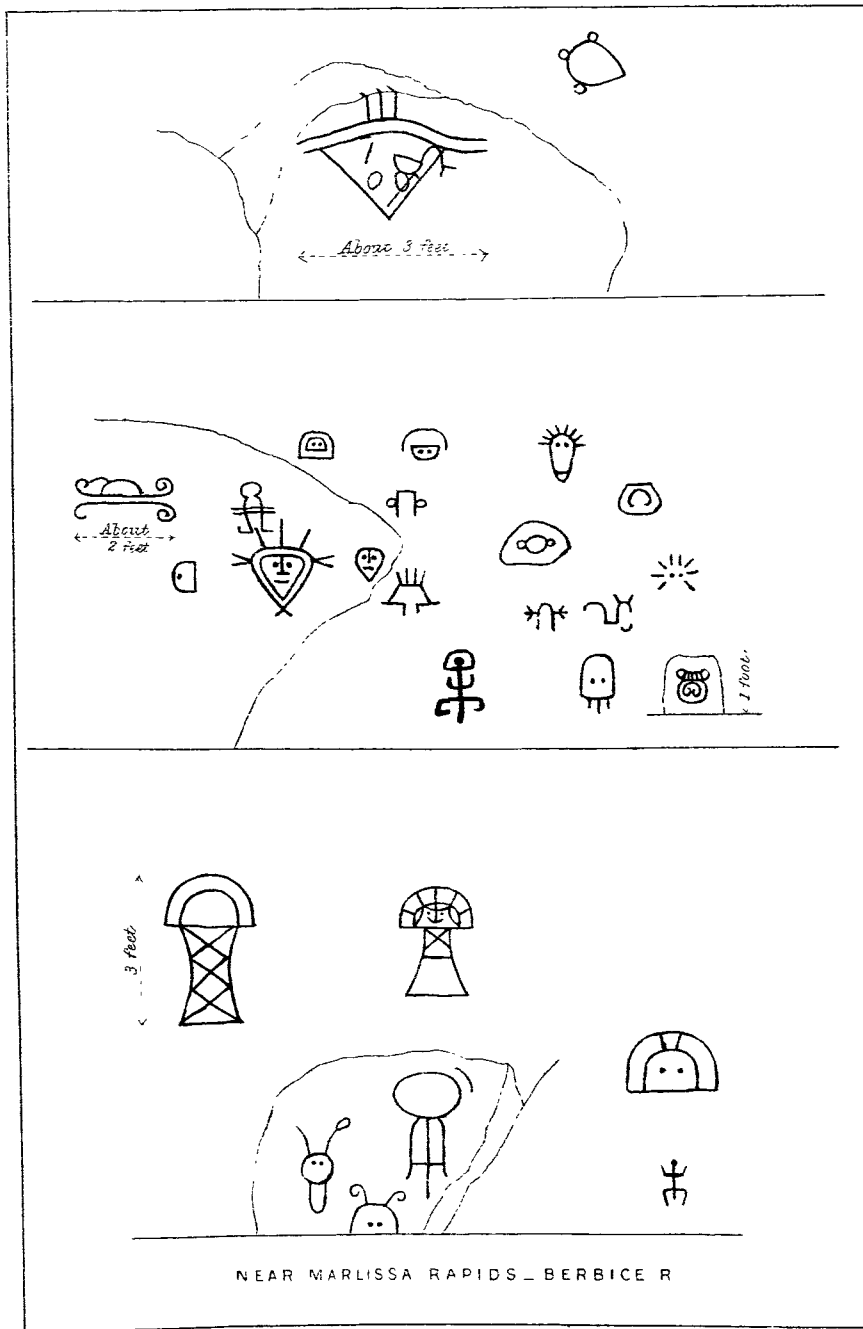
ABOVE WONOTOBO CATARACTS.



ABOVE CHRISTMAS CATARACTS - BERBICE R.
ON BRANCH OF COVENTYNE R



NEAR MARLISSA RAPIDS - BERBICE R



The following are the principal localities of the picture writings sketched in the annexed drawings :

1. On the Essequibo, the largest river in British Guiana, they are found in five different places, viz., at Waraputa cataract ; at Cumutie rock ; at the Onropocari cataract ; at the Takarimi rock ; and at Bubumana cataract. These places are mentioned in the order in which they occur in ascending the river. The first is in about $5^{\circ} 20'$, and the last in 2° of north latitude. They are also found on the Cassikityn river, a tributary of the Essequibo.

2. On the Quitaro river, about sixty miles to the north west of the Cassikityn.

3. On the southern slope of the Pacaraima mountains, near the Indian village of Karakanang, near the Cotinga river.

4. At Wantriana fall, on the Ireng river, some thirty miles to the westward of the last locality, and between Mora and Caracara villages, near the same river.

5. On the Corentyne river, at Temerhi rock ; in the vicinity of the Wonotobo cataract ; between the last place and the Aratipu cataract ; and on a branch of the Corentyne lately discovered by the Geological Survey.

6. On the Berbice river at Marlissa rapids ; and above the Christmas cataracts, where many curious specimens occur.

REPORT on AUSTRALIAN LANGUAGES and TRADITIONS. By the Rev. WILLIAM RIDLEY, M.A. Communicated by the Earl of KIMBERLEY.

To the Honourable the Colonial Secretary of New South Wales.

SIR,—I have the honour to lay before you the result of investigations made during the journey to Namoi and Barwon Rivers, in compliance with instructions received from you.

I left Sydney on the 20th June last by the Morpeth steamer ; I landed next morning at Newcastle, and went on by railway to Scone. Thence I travelled on horseback, by way of Murrurundi and Breeza Plains, to Gunedah, on the Namoi, down that river to its junction with the Barwon at Walgett, and along the course of the Barwon, from Gingi, near Walgett, to Collemungul, at the junction of the Gwydir. In going and returning I travelled 1070 miles, and reached Sydney again on the 24th July.

The information obtained during this tour is here arranged in three divisions : 1. Language ; 2, Social Laws and Customs ; 3, Religious and Mythical Traditions.

It is assumed that those to whose consideration this information is submitted have access to my work on "Kamilaroi, Dippil,

and Turrubul", sent to the Paris International Exhibition of 1867, to which this report may be regarded as supplementary.

1.—*Language.*

In writing aboriginal words I use the vowels thus:

ā as a in father	o as o in on
ā as a in arise	ū as oo in moon
a as a in mat	ū as u in put
ē as ey in obey	u as u in but
e as e in met	ai as i in wine
i as i in marine	ao as ow in how
i as i in bit	oi as oi in noise
ō as o in tone	

G has only the hard sound as in go; z has the sound of n in bank or of ng in ring; w and y have only the consonant in we and ye.

Names of Places, with their Meanings.

Gunedā (commonly spelt Gunnedah)—destitute. This is a thriving township on the Namoi, near Breeza Plains. The name indicates that at some time a man was found there without food, fire, or blanket.

Bogābrai (Boggabri)—high bank. This is the township on Cox's Creek, Namoi. It is on a slope above the reach of the floods which sometimes cover Gunedā.

Gūligal—long grass-seed.

Ināriendrai (Heuriendy)—the sale of the woman.

Nurrābrai (Narabri, central town of the Namoi)—the forks.

Wi-awā (Wee Waa—the next town)—roasting-place.

Bulērāwā (Mr. Dangar's station—a place of bulera, a tree, bastard myalla acacia).

Wolobrai (another station)—stones (in Wirairai dialect).

Deran—dry ground.

Yaruldul (a station on the Namoi)—stony.

Gūigola (a station)—red ground.

Telūba, or Kelūba (a station)—indigenous clover.

Derildul, Drilddool (a station)—reedy.

Wārian—a poisonous onion.

Mobbo—beefwood (a tree).

Wuriga—clear ground.

Turi—a water weed.

Miat, or Miari—a well (in Wirairai).

Gūlaigul—a sapling.

Ginne—wood (in Wuzai dialect).

Tinai—iron-bark.

Tinwai—string.

Burran—boomerang.

Wuzai—no good. (in Wuzai).

Wurai—no (in Wirairai).

Kumbul—turkey buzzard (in Wailwun).

Milkomai—eye dropped out.

Kubbo—a grub.

Mianbār—a deep tank.

Kollemungul (at the junction of the Gwydir and Barwon)—too much water.

Duzgalia (on the Barwon)—a little piece of wood.

Buri, or Bri-warina (Breevarina)—acacia pendula springs up.

Yuri Yuri—a species of parrot.

Mūrgūdul—abounding in the murgu, or night cuckoo.

Kolorinbrai—abounding in kolorin, the flowers of the kulubā tree.

Yunder—deep bank.

Bāwan (in Kamilaroi), Wāwun (in Wailwun)—the river (Barwon).

Wolgër (Walgett, town at the junction of the Namoi and Barwon)—a hollow in the ground.

Worina (Warina, a point near the junction)—rising ground. The township was named after the hollow "wolger", but was prudently fixed on the "worina", or rising ground, above the floods.

Yüröka (a station on the Barwon)—sun.

Yugalwun—place of yugal (a tree, myrtacea).

Goaz-gara (on Namoi)—black.

Piliga—oaks.

Wiriginigal (on the Bugaira, Bokhara)—long tooth.

Wongun (Wangun, near Baradine)—crooked bark (Wiragere).

Dungun (same in Kamilaroi).

Kūmāl—a place where a man died.

Geribila—a place where twins were born.

Burburget, Burburgate (on Namoi)—thick gum scrub; but, according to Billy M. Būndar, "burbur" means belts.

Dīri (the proper name of a sheep station connected with Burburgate, commonly called Currambede)—grey.

Worri—Mount Lindsay, between the Namoi and the Gwyder.

Kawirri—a mountain east of Mount Lindsay.

Bāwir—a sugar-loaf peak in the same range.

Mūkai, Mooki (a river flowing from Liverpool Range to the Namoi)—rocky. This river runs through deep black mud, and is very boggy, except at Wallhollow, where it runs over rocks.

Languages Spoken on the Namoi.—Kamilaroi, Koinbere or Goinberai, and Wirāthere.

Languages Spoken on the Barwon.—Kamilaroi, above Walgett; Wailwun, below Walgett—the junction of the Namoi; Mūrneri, to the west; Woyai-bun, Wolaroi, Wiraiarai, and Kuno or Guno, to the south.

Additional Words and Phrases in Kamilaroi, Wailwun, etc.

I.—KAMILAROI.

Kai,	little child.
Birribirai,	a youth not yet admitted to a bora.
Rubora,	a young man who has just attended
Bōrbā,	a full man. [his first bora.
Miredūl,	a young woman.
Inār,	a woman.
Yambuli,	an old woman.
Burian and Tūri,	light.
Yūrū,	darkness.
Kurra,	grass.
Kurril,	leaf.
Gāren,	a flower.
Ugan,	a branch.
Dūril or Dūril,	a large reed.
Wurrian,	another reed.
Kārui,	bush.
Nizil and Piririqul,	salt bush.
Wozgun, Wāun, and Wārū,	a crow.
Quai,	the Namoi pine.
Bilar,	swamp oak.
Qurarā,	indigenous clover.
Yūrūl,	scrub underwood.
Buriar, Maieri, and Yaraga,	the wind.
Buli,	whirlwind (an object of great terror).
Gāulan and Gūnagulla,	sky.
Yurumi and Mi,	lightning.
Tulumi,	thunder.
Ginbi,	a muscle.

Gurman,	a leech.
Qūleale, Qūlamboli, Yarumbon,	a pelican.
Gunundal, [and Yarabon]	a large diver.
Guminbai,	wood-duck.
Gūlawilil,	crested pigeon.
Tummar,	bronze-wing pigeon.
Mulygal,	a little bird (white throat).
Yūrū and Gundār,	cloud.
Du or Dhu,	smoke.
Mulganulga,	horns.
Kua,	fog.
Būlūmin,	apple tree (eucalyptus).
Bibil,	broad-leaved box.
Būrigul,	bugalow.
Kūbū,	forest oak.
Maial,	acacia pendula.
Kāwi,	bastard acacia pendula.
Turilawa,	water-lily.
Yerau,	gum tree.
Yūrū,	Namoi pine.
Dhulindiar,	a flowering shrub.

Weapons.—Burran, boomerang; bundi and beramba, clubs; burin, shield; dūlū and pilār, a spear. In the language of Baradine, M. Wuzai or Wozai, a boomerang is bulgari.

Kunmulla,	catch hold.
Wunnabilla,	let go.
Turruwulle or duraole,	go back.

Colours.—Gue, blood-red; yutta, bay; būlūi, black or dark blue or brown; būlumbūlūi, dull light green or brown; zūndizūndi, roan; gūlūliba, piebald; bulla, white or grey.

II.—WAILWUN WORDS.

Wail,	no.
Sun,	dūni; in Kamilaroi, yarai; in Wai- rairai, yaraqun, also yūrōka.
Moon,	givor; in K., gille.
Sky,	gunaqualla; in K. same.
Stars,	girili; in K., mirri.
Fire,	wī; in K. same.
Water,	kolle; in K. same.
Tree,	koqūr and kobūrū.
Pine,	gurabā; in K., guai and gurere.
Acacia pendula,	būri or bri; in K., maial.
Father,	būba; in K. same; "papa" in all the world.
Mother,	gūnni; in K., zumba; but where K. is spoken "gūnnū" or "gūni" is used by children in addressing their mothers, as "mamma" or "mother dear."
Child,	worrū; in K., kai, but "wūrrāme" is
Hand,	marra; in K. same. [son in K.
Foot,	dinna; in K. same.
Thigh,	durra; in K. same, and nearly over all the continent.
Knee,	bundē; in K., dinbir
Thumb,	gunendir; in K., gūeredirba
Fingers,	worria.
Ground,	tagūn; in K., taon.
Cut-bark,	zunūmba.

Fishponds,	zännū.
Cockatoo,	mūrrai; in K., biloēla.
Crow,	wārū; in K. same.
Laughing jackass bird,	kūkūburra; in K. same, also gorra- worra and kūkūrāka.
Crested pigeon,	tao-ilgera; in K., gūlawilil.
Bronze-winged pigeon,	mūnūmbi; in K., tummūr.
Pelican,	gūlamboli; in K. same.
Black swan,	kūzadūa; in K., barriannul.
Padymelon,	wirū; in K., murriira.
Bandicoot,	gūrū; in K., bilba.
Opossum,	kuragi; in K., mute.
Iguana,	dūli; in K. same.
Black snake,	dūrū; in K., nurai.
Carpet snake,	yūbba; in K. same.
Black duck,	būdumbā.
Whistling duck,	thipaiyu.
Teal,	daraoer.
Red duck,	guraor.
Blue-winged duck,	ūlū.
Wood-duck,	kūnambi; in K., gunambi, also kaoai.
Spoonbill duck,	wilidubai.
Musk duck (diver),	kumogūmar.
Small diver,	tirmum.
Large diver,	dūgūrū.
Black swan,	burrima.
Black and white wagtail,	dirijiri.

(These ducks, etc., are chiefly named from their notes.)

Turtle,	waiember.
Cod (fresh water),	kuddu.
Black bream,	kumbal (this word also means turkey
Yellow-bellied bream (the best	tuggai or duggai. [buzzard.
Small bream, [fish here],	berze.
Catfish (with poisonous prickles),	duzgūr.
Shrimp,	tugale.
Lobster,	kēri.
Crab,	zulga.
Porcupine,	bigabilla.

A yam found on the ridges of the hills near these rivers, with the flavour of an apple, and always of an ice-like cold, is called in Wailwun, gūnawā, in Kamilaroi, guweai.

To laugh,	gindani.
To cry,	yūzāni.
To sing,	buga.
To sneeze,	tiga.
To cough,	gunuzguna.

North-West—Mūrala.—From this point, according to King Rory, of Gingi, on the Barwon, the race of Murra originally came.

Cold,	gūnūndai; in K., kārīl.
Hot,	girru; in K., kūdwailona.
Sick,	wogin or giraugira; in K., wibil.
Anger,	gulgi; in K., yili.
Catch,	mumulli; in K., kunmulli.
Bite,	kutulli; in K., yildona.

III.—PIKUMBUL—SPOKEN ON THE MACINTYRE.

“Pika” signifies yes. As in Kamilaroi, “yuru” is sky, “gille” moon, “wi” fire; but water is “bunna” (in K., kolle); tree, “kazgar”; to speak, “guagga” (in K., goala). The numerals in use on the Barwon and Balonne are:

- | | |
|---------------|----------------------------|
| 1, mal | 6, malmulanbu mummi |
| 2, bular | 7, bularmulanbu mummi |
| 3, gūliba | 8, gulibamulanbu mummi |
| 4, būlārbulār | 9, bulārbulārmulanbu mummi |
| 5, mūlanbū | 10, būlarin murra |

N.B.—*-zu* and *-u* are terminations of the genitive or possessive case, so that “bularin murra” means “belonging to the two hands”; that is, ten fingers.

- | | |
|-----------------------------|-------------------------------|
| 11, maldinna mummi | 16, mal dinna mulanbu |
| 12, bular dinna mummi | 17, bular dinna mulanbu |
| 13, guliba dinna mummi | 18, guliba dinna mulanbu |
| 14, bular bular dinna mummi | 19, bular bular dinna mulanbu |
| 15, mulanba dinna | 20, bularin dinna |

Here “bularin dinna” means “belonging to the two feet”; that is, ten toes—assuming that the ten fingers are counted before we begin with the toes; so that eleven is one of the toes added on (to ten fingers); fifteen is five toes added on; eighteen is three, and five toes added on.

IV.—KOGAI—SPOKEN WESTWARD OF THE BALONNE.

Black fellow,	murdia.
Father,	yabunu.
Mother,	yazānū.
Son,	andu.
Daughter,	būrgal.
Grandson,	yāmbirū.
My,	yuddu.
Dog,	murrūn.
Honey,	ubba.
Opossum,	duzur.

Phrases.

1. A Corroboree in Kamilaroi sung in 1854, on the Mooni ponds :

“Diza diza burula, murriza dibbura.”

Supposed meaning: Wild dogs, wild dogs in plenty, black fellows spearing them.

2. A Corroboree in Kamilaroi sung in 1871, near Bulerawa, Namoi :

“Bukumulle mullimulli, dubzēr wine.”

Skinning ghost, double up let fall.

i.e., the ghost was skinning him, and doubled him up, and let him fall.

3. Phrases spoken on the Barwon :

My friend,	zai dhārūdi.
You and I hate one another,	thal (or dhal) mda wima bulanba-
'Tis only lies,	yeal gūnial. [rana.
Truth,	girū.
My own,	zaii guizun.
The water runs over the stones,	kolle bunagilla yarula.
I shall be there by the day mentioned,	yerāla zaia zērma dhūrāli zurri.
Where he is I do not know. I was	zerma zuriluna kamil zaia zerma
not there this morning. I think	warizene; wollai ya zurrilona.
he is at the camp.	

4. Phrases in Wailwun :

I think,	winuzunni.
I love you,	kurridu yinunduz inda.
I hate you,	zadunu gumallago.
I do not like you,	wail du zinunda zinda.
Murray is angry with Ippai, and	Murray Ippai gulgai maii kumulla
threatens to fight him.	gurri.
Ippai and Murray are good friends,	Ippai Murray bobāmbon.
You are my love (little spouse),	za zinda gūlerdūl.
He is a bad man, have nothing to	gūn murruba, wonna guma.
I hope,	yaia barābai daraœla.
[do with him,	

2.—*Social Classification, and Laws of Marriage and Descent.*

Over a large portion of this colony and of Queensland, and probably with some variations in all parts of Australia, there prevails a system of classification, including every one of the people from birth, which is made the foundation of certain rules of marriage. In districts where different names are used similar rules prevail.

On the Namoi and Barwon, and a great distance to the north and south, the classes are : 1, Ippai and Ippāthā ; 2, Murri and Māthā ; 3, Kumbo and Būthā ; 4, Kubbi and Kubbotha. In some families all the sons are Ippai, all the daughters Ippatha ; in others, all the sons are Murri, the daughters Matka ; in others, all the sons are Kumbo, the daughters Butha ; in the remaining families, all the sons are Kubbi, the daughters Kubbotha.

In the use of the consonants, the aborigines often change their mute middle consonants and aspirates. Thus, "ippai" is sometimes sounded "ibbai"; and the name of Ippai's sister is pronounced "ibbata", "ippata", and "ippatha". Then the vowels *a* and *u* are interchanged, as some English people pronounce servant "servant". Thus, the name of Kubbi's sister is pronounced "kapota", "kupota", "kapotha", and "kubbotha", and Murri's sister is "Mātā" or "Māthā", Kumbo's is "Buta" or "Būthā". There is no variation in the pronunciation of Murri, Kumbo, or Kubbi, although in other words *p* is softened into *b*, and *k* into *g*. I write the names according to what seemed to me the most common mode of pronouncing them among their own people. As a general rule, the children of Ippai are Murri and Matha ; the children of Murrai are Ippai and Ippatha ; the children of Kumbo are Kubbi and Kubbotha ; those of Kubbi are Kumbo and Butha. And generally Ippai marries Kubbotha, Murri marries Butha, Kumbo marries Matha, and Kubbi marries Ippatha.

But there are exceptions ; for when Ippai marries Ippatha, their children are Kumbo and Butha ; when a Kumbo marries a Butha, their children are Ippai and Ippatha. This apparent exception shows that the mother's name, and not the father's, determines the names of the children. Thus, Ippai's children are Murri and Matha or Kumbo and Butha ; but Ippatha's children are always Kumbo and Butha, whether she is married to Kubbi or Ippai, and Butha's children are always Ippai and Ippatha, whether she marries Murri or Kumbo.

A subdivision of the four classes, which was explained to me during my late journey, illustrates this principle of the mother's name determining those of the children, and also shows how an Ippai may, within certain limits, marry an Ippatha without danger of being guilty of incest. And though the polygamy

allowed by their law displays, to our judgment, a want of moral sense, the aborigines are undoubtedly very zealous for purity as they define it.

The four classes are subdivided into ten; that is, two subdivisions of Murri, two of Kumbo, three of Ippai, and three of Kubbi. In some places it is affirmed that the Ippai are the highest class; in other places Kumbo; but those who seemed to me most reliable witnesses stated that the order was: 1st, Murri; 2nd, Kumbo; 3rd, Ippai; and 4th, Kubbi. The Murri bear a name almost identical with that of the nation, Murri. This title, "Murri", seems allied to "murra", great or good; with the suffix "-ba", it is always "murruba", good. A conviction of their own excellence may have led these people to call themselves Murri, as the Hindus call themselves Aryan. The resemblance of the class name to that of the nation, and to the word signifying great and also good, supports the assertion made by a half-caste of great intelligence who had been brought up with the blacks, that the Murri are the first of the four classes.

Here are the ten subdivisions of the four classes:

1. Murri and Watha dūli, or tūli (iguana).
2. Murri and Matha murriira (paddy-melon).
3. Kumbo and Butha dinoun (emu).
4. Kumbo and Butha nūrai (black snake).
5. Ippai and Ippatha dinoun (emu).
6. Ippai and Ippatha nūrai (black snake).
7. Ippai and Ippatha bilba (bandicoot).
8. Kubbi and Kubbotha mūtē (opossum).
9. Kubbi and Kubbotha dūli (iguana).
10. Kubbi and Kubbotha murriira (paddy-melon).

Ten rules of marriages are founded on this classification.

1. Murri duli marries Matha murriira, or any Butha.
 2. Murri murriira marries Matha duli, or any Butha.
 3. Kumbo dinoun marries Butha nurai, or any Matha.
 4. Kumbo nurai marries Butha dinoun, or any Matha.
 5. Ippai dinoun marries Ippatha nurai, or Kubbotha duli, or Kubbotha murriira.
 6. Ippai nurai marries Ippatha dinoun, or Kubbotha mute.
 7. Ippai bilba marries Ippatha nurai, or Kubbotha murriira.
 8. Kubbi mute marries Kubbotha duli, or Ippatha dinoun.
 9. Kubbi duli marries Kubbotha murriira, or Ippatha bilba.
 10. Kubbi murriira marries Kubbotha duli, or Ippatha nurai.
- "Guler" signifies spouse, either husband or wife.

Five rules comprise the law of descent. In all these it is the mother's name that determines those of the children.

1. The second name of the sons and daughters is always the same as the mother's. Thus, if the mother is a dinoun, all her

children are *dinoun* ; if a mother is a *murriira*, all her children are *murriira*. It follows that whatever animal's name a man now bears has been the name of his mother, grandmother, great-grandmother, and upwards, of the mothers in all generations. So, if a woman is a "*duli*", all her descendants to the end of the world must be "*duli*", whether male or female.

2. The children of *Matha* are *Kubbi* and *Kubbotha*.

3. The children of *Butha* are *Ippai* and *Ippatha*.

4. The children of *Ippatha* are *Kumbo* and *Butha*.

5. The children of *Kubbotha* are *Murri* and *Matha*.

These rules, founded on the mothers' names and the subdivisions, explain all the apparent exceptions which came up when an attempt was made to discover rules of descent founded on the fathers' names. This system seems to combine something like caste with communistic equality. *Murri* is of the highest class ; but his son is either *Ippai* of the third (if his mother is *Butha*), or *Kubbi* of the lowest (if his mother is *Matha*). *Kubbi* is of the lowest rank ; but if he marries a *Kubbotha* his sons will be in the highest.

On the *Narron*, the next river to the westward of the *Barwon*, there are three subdivisions of *Murri* : *M. duli*, *M. mute*, and *M. maierei* (paddy-melon) ; and only two of *Kubi* : *K. duli* and *K. maieri*. There are also three of *Kumbo* : *K. bundar* (*kan-garoo*), *K. nurai*, and *K. kuzuzalu* (*bandicoot*) ; and only two of *Ippai*, *I. bundar* and *I. nurai*.

On the Upper *Namoi* the names "*Murri bundar*" are found together, and for *murriira* they use "*maiera*".

Among the *Wailwun* tribes, below the junction of the *Namoi* and *Barwon*, there are four subdivisions of *Murri* : *M. murriira*, *M. mute*, *M. gūrū* (*bandicoot*), and *M. duli* ; four of *Kubbi* with the same animals' names as the *Murri* ; three of *Kumbo*, and three of *Ippai*, each class having the names *dinoun*, *nurai*, and *bundar*. In other parts of the country, about the *Balonne*, the *Kumbos* are *dinoun* and *burrōwen* (a *wombat*) ; the *Ippais* are *bundar* and *nurai* ; the *Murris* are *mute* and *maieri* ; and the *Kubbis* are *maieri*, *mute*, *duli*, and *gūlū* (*bandicoot*). Among the *Pikumbul* blacks on the *Macintyre*, the *Ippai* are divided into *I. dinoun*, *nurai*, and *yūlūma*.

Among the *Kogai* speaking blacks on the west of the *Balonne*, the class names are *wuzgo*, *wuzgōgun* for *Murri* and *Matha* ; *Unburri* and *Unburrigun* for *Kumbo* and *Butha* ; *Urgilla* and *Urgillagun* for *Ippai* and *Ippatha* ; *Obūr* and *Obūrugun* for *Kubbi* and *Kubbatha*. Between *Moreton Bay* and *Wide Bay* in *Queensland*, the names are *Bārāz* and *Barazgun* ; *Bundār* and *Bundārun* ; *Bāndūr* and *Bāndūrun* ; *Derwain* and *Derwaizgun*.

Brothers and sisters speak of one another by titles that indi-

cate relative age; that is, their words for brother and sister always involve the distinction of elder or younger. In Kamilaroi “daiādi” is elder brother, “gullami” younger brother; “boādi” is elder sister, “būri” younger sister. So that in a family of seven brothers the eldest has no daiādi, but he has six gullami; the youngest has no gullami, but six daiādi; the third has two daiādi and four gullami, and so on. Of seven sisters the eldest has no boadi, but six buri; the youngest has no buri, but six boadi; the fourth has three boadi and three buri. In Kogai, “Tāgūndilla” is elder brother, “miandilla” younger brother; “munzunnu” is elder sister, “bābunnu” younger sister. Higher up the Namoi, the name for younger brother is kolami, and those signifying elder and younger sister are būkāndi and bōriandi.

This system of relationship comprises, as I was informed by the Rev. Lorimer Fison, Wesleyan Missionary in Fiji, to whom I shewed it with a view to obtain his judgment on the subject, all the eight characteristics of the Tamil system, which has been found established among the Tamil tribes of Hindustan, the Fijians, and some of the North American tribes. For to take examples, Murri and Matha: (1.) Murri's brothers' children are generally Ippai and Ippatha, like his own; while his sisters' children are always Kubbi and Kubbotha. (2.) Matha's sisters' children are always Kubbi and Kubbotha, like her own; while her brothers' children are generally Ippai and Ippatha. (3.) Murri's father is Ippai, so are all his father's brothers; but his father's sisters are Ippatha, they are aunts not mothers. (4.) Murri's mother's sisters are Kubbotha, like his mother; his mother's brothers are Kubbi. (5.) Murri's father's brothers' children are all Murri and Matha, his brothers and sisters, so are his brothers' sisters' children all Murri and Matha; but his father's sisters children are Kumbo and Butha, and his mother's brothers' children are also Kumbo and Butha. (6.) The children of Murri's cousins, Murri and Butha, are all Ippai and Ippatha, like his own children; the children of his cousins, Matha and Kumbo, are all Kubbi and Kubbotha. (7.) The brothers of Murri's paternal grandfather, Murri, are all Murri; and those of his maternal grandfather, Kumbo, are all Kumbo. The sisters of his paternal grandmother, Butha, are all Butha; those of his maternal grandmother, Matha, are all Matha. (8.) Brothers and sisters, when named as such, are always distinguished as elder or younger, there being no word signifying merely brother or sister, and equally applicable to elder and younger members of the family.

It will be seen that the above rules of descent and marriage prevent the intermarriage of near relations. They prohibit

marriage with a sister, half-sister, aunt, or niece. They also prohibit marriage between first cousins, children of two brothers or of two sisters. But when first cousins are the children of a brother and a sister respectively, the law does not prevent their union.

Any breach of these laws incurs sentence of death, or of exposure to an ordeal that may end in death. A few weeks ago, as I was informed by Mr. Neale of Sydney, at Bundabarina, while he was at the Narrau, two young black fellows had been found guilty of taking to themselves women within the prohibited classes. As the women had consented to this breach of the laws, they as well as the young men were condemned by the tribe to die. But an aboriginal known by the name of Peter, who had acquired, by the boldness with which he assumed authority, great influence over all the tribes in that part of the country, knowing that these two young men were useful servants to the squatters and wishing to render a good turn to his white neighbours, resolved to save their lives, and came forward as their champion. He had to stand before a shower of spears from the men of the tribe. While he was defending himself, the young men skulked off, but the women remained and helped him by picking up the spears, which he broke in pieces. He remained exposed to the spears till the tribe were satisfied that justice demanded no more, and then told the young men who deserted him, that if they offended again he would leave them to their doom.

The following words are used for relatives: "zumbā," mother; "zumbadi," mother's sister; "kurugi," uncle; "kurugāndi," nephew; "pāmāndi," uncle's wife; "wūrume," son; "yamur," daughter; "boanmundi," grandson; K.'s mother's sister's son is to K. "daiadi" or "gulami"; K.'s mother's sister's daughter is to K. "bukandi" or "bōriandi."

The above rules fix two names on every person from birth. It is common to have a third name. Here are some examples: an Ippai nurai is called "kurai brüddhin mūniyē" (duck's feather); a woman Ippatha, is known as "yadai yunderi" (opossum cloak); another woman is called "bungul" (short); another Ippai is "yuggai wilai" (a kind of snake); a Wirathere speaking man is called "Taratalu" (speared in the shoulder); his son is Yippumenele" (an eagle looking all round). Another man is called "Thugerwun" (turtle). The aborigines also give distinctive names, generally derived from some personal peculiarity, to the white people with whom they are familiar. Thus, the gentleman who told me the above names is himself called "Dungumbir" (the rain maker), a complimentary recognition of his cleverness in meeting an emergency. Another squatter is called

“wolum biddi” (large head), and another is known as “Tarundera” (great legs and arms). A black on the Namoi, Kumbo dinoun, known to the whites as “Billy,” is distinguished by the name “Bünberüge,” signifying that his leg was once broken by a fall from a horse. Billy Murri Bundar of Burburgate, is called “zumera gunaga,” from the place where his father was buried. He says every Murri is named from his father’s burial place.

Law as to Childbirth.—Women are strictly secluded at the time of childbirth, and for six weeks afterwards. An old gin is appointed to attend the mother in her confinement. At the end of the time of seclusion, this old gin burns every vessel that has been used by the secluded woman; and in some parts of the country also burns off part of her hair. During the monthly illness, the woman is not allowed to touch anything that men use, or even to walk on a path that any man frequents, on pain of death.

Law of Retaliation.—If one man kills another maliciously and unfairly, an obligation rests on the men of the same class as the murdered man to kill one of the class to which the murderer belongs. Thus, if a Kubbi murriira kills an Ippai dinoun, some Ippai dinoun must satisfy justice (as understood by the Murri) by killing a Kubbi murriira.

3.—*Religious and Mythical Traditions.*

In every part of Australia where I have conversed with the aborigines, they have a traditional belief in one Supreme Creator. It seems strange to those who are at all familiar with the thoughts of these people, that in such standard works as the “Encyclopædia Britannica” the statement should be repeated, even in late editions, that the aborigines of Australia have no notion of any beings superior to themselves. The fact is, they believe in many unseen spirits, some benevolent and some mischievous, departed spirits of dead men, and demons of forest, lake, river, and mountain, and they also believe in one Supreme God. The Kamilaroi and Wailwun blacks call him Baiäme, sometimes Paiäme or Paiöme. On the Macintyre, the main tributary of the Barwon, the name of the deity is Anambū, and in the neighbourhood also Minnambū. In Queensland, the word Mūmbāl or Mūmbā (thunder) is used as the name of Him who thunders, who also made all things. In the southern part of this colony, at Twofold Bay, the name Dhūrūmbūlūm, which signifies on the Namoi a sacred staff originally given by Baiäme, is used as the title of Deity.

The common answer of intelligent black fellows on the Namoi or Barwon, when asked if they know Baiäme—an answer

that was made to me some eighteen years ago, and again by a man to whom I had never before spoken a few weeks ago—is this: “Kamil zaia zummi Baiāme, zaia winuzguldā” (I have not seen Baiāme; I have heard, or perceived, him). If asked who made the sky, the earth, the animals, and man, they always answer “Baiāme”. Some avow the belief that when good men die their souls go up to Heaven to Baiāme, while the bad when they die cease to exist. Some say that all, good and bad, go up to Heaven. Others say that human beings, on dying, pass into the form of the turuwun, a little bird with a very cheerful note.

“Wunda” signifies ghost or spirit. They believe in many “wunda”, and when white men appeared they called them “wunda”. In all parts of Eastern Australia the word previously used for ghost was applied to white men. With the belief in dangerous ghosts, they have faith in the power of incantation to protect themselves against ghosts. I have seen a pantomime kept up all night by a party of black fellows, adorned with red, yellow, and white clay, marching, dancing, and beating the air, while women beat time and sing over and over with some of the men,

“Yūrū thāri ze, yuru thari ze,
Dula raza būrulā, yuru thari ze.”

And the purpose of this night’s ceremony was said to be to drive away the spirits of the dead.

More of their religious ideas will be found in the following descriptions of the Bora, funeral rites, and legends of the stars.

The Bora.—The Bora is the ceremony of admitting young men to the privileges of manhood. It involves the idea of dedication to God. When I asked old Billy Murri Bundar if they worshipped Baiāme at the Bora, he replied, “Of course they do; it is held on his ground; it is always near where black fellows are buried.” This answer evidently showed that to the minds of the aborigines the burial-ground and the place set apart for the initiation of young men are consecrated to the Deity. And the concluding part of the ceremony, as will be seen, confirms this view.

When a sufficient number of young men have arrived at an age to claim admission into the rank of adults, if the season is good—that is, if there is an abundance of animal food, fruits, and the herb crowfoot—the blacks over a large extent of country, sometimes including tribes which at other times are separate and hostile, elect a dictator to manage their Bora. Sometimes one succeeds his brother in this office. This leader then selects a fit piece of ground, fixes the time for the beginning of the ceremony (always at the full moon), and then sends

a messenger round to all the tribes included in the Bora, to give notice of the time and place of meeting. This herald bears in his hand a boomerang and a spear with the skin of a murriira (paddy-melon) fastened to it. All who are summoned must attend. "If it is a hundred miles off," said Billy Murri Bundar to me, "a man must go. It is this way", he added, "all over country, and will be kept up always, I believe." Billy's faith in the perpetuity of the Bora was derived from his idea of its origin. For he assured me that Baiäme at first ordered them to keep the Bora, and gave them the Dhūrūmbūlūm, or sacred staff, which is exhibited at the close of the service.

The notice is given from three weeks to three months before the opening of the Bora, according to the extent over which those summoned to it reside, and other circumstances. During the interval, the leader and other men prepare the ground, making a semi-circular embankment about it, clearing off the underwood, and marking on the trees figures of birds, snakes, etc. At the appointed time the men all leave their camps, where the women and boys remain, and assemble at the bora-ground. There they assist in completing the arrangements. When all is ready, some of the men go to the camp where the women and youths are left, and pretend that an enemy is coming to attack them. Upon this the women run away; and the young men and boys, from about thirteen years of age and upwards, accompany the men to the scene of the Bora. There a great fire is lighted up, around which the men dance night and day. There is no singing, as at a Corroboree, only dancing and beating time. The old men are blackened with charcoal, over which various figures are made with white clay. Some of them wear horns. The old men explain to the novices the meaning of the marks on the trees. The dancing and other performances continue three weeks. Towards the end of the time, as I was informed by old Billy with an air of great confidence and solemnity, the sacred wand, "dhūrūmbūlūm", the gift of the deity, is produced before the awe-struck eyes of the novices in whose presence the old men perform various motions with it. The sight of this sacred symbol confers the privileges of manhood. No woman has ever seen it; and no boy is ever allowed to see it until he has passed through the earlier stages of the Bora.

Formerly they used to knock out one of the front teeth of the young men. This custom has been abandoned, one good fruit of their acquaintance with civilised men. It would be difficult to find out any other improvement derived from their intercourse with Europeans. They strenuously deny that they or their fathers ever practised a custom that has been ascribed to them by their detractors, of compelling the young men, on

their initiation, to eat excrement. This report has been repeated to me by several; but I never met any one, black or white, who said that he had seen it done.

When the men have finished their performance, the initiated youths are taken to a camp by themselves, where they stand in smoke, and afterwards lie down and continue many days without food. Altogether, the process of making men occupies two months. During the fast, the men who cover up the youths keep watch over them, and probably supply them with nourishment enough to keep them alive. But they are made to suffer severely, and come back from the Bora much reduced.

They are very jealous lest women or strangers should intrude upon their sacred mysteries. It is death for a woman to look into a Bora; and even when old King Rory began, in Mr. Sparke's kitchen, to speak about the Bora, Bungul, a young woman of his tribe, who had been listening to all he said on other subjects, instantly slunk away lest she should incur the guilt of hearing about the Bora.

As soon as the appointed time for concluding the fast is come, the youths, who were before "biribirai", are recognised as "kubora", and after a time become "bōrbā" (full men). They may then take wives in accordance with the marriage law, and eat turkey bustard, codfish, female opossum, and honey, not one of which may be touched by biribirai or unmarried women. Male opossum and jewfish are the food of the uninitiated. Married women, like men, may eat anything.

Funeral Rites.—As soon as the death of an aboriginal is known, the tribe unite in a loud and most melancholy wail. The next day in some cases, after two or three days in others, they bury the dead body either in a hollow tree or in the ground. A chief, a venerated father, or a loved friend, is put into a hollow tree. Men of less consequence, and all women, are buried in the ground. They make coffins of bark, and sometimes the ornaments and appendages of these stretch out its length to thirteen feet. As they lower the body into its resting-place they utter a loud "whirr", which is assumed to be the rushing sound made by the departing spirit in its ascent to Heaven. When the bodies are buried in the ground, a hole is dug deep enough for them to be put upright on their feet, and to have an empty space above them, which is covered in with wood so that nothing may touch the head of the deceased. The earth is carefully pressed down over the wooden roof of this tomb and a mound is raised over it. They are very careful in keeping these mounds; and in their cemeteries, as may be seen by engravings in Sir Thomas Mitchell's narrative of his journeys to

the North-west, an appearance of order and decorum is preserved.

Their lamentations for the dead are sometimes continued for five months, and even more. During this time the women of the tribe are plastered over with light mud, and often cut their heads with tomahawks. I have seen the blood running down from the head of an old woman, from four or five deep gashes over the white mud. The grief which they express by these remarkable artificial tokens is, in some cases at least, manifestly very deep. I saw, for instance, at Walgett, a young man whose wife was dying in consequence of having been severely burnt, and the tears that poured down his cheeks, the anxiety and grief expressed in his countenance and every act, were such as could not be counterfeited. Generally, perhaps the strongest natural affection they exhibit is that of parents for their children. Brothers and sisters, also, manifest in some cases great concern one for another. After a burial they often make many little fires about the place with leaves and boughs. At one place I was told that this was designed to drive away troublesome spirits from the living; but King Rory described it as a sacrifice for the benefit of the dead. A black fellow of doubtful character according to their code of morals, having died, his sister was for some time after the burial occupied in going all round about lighting fires, and thus, as Rory believed, "made him go up good".

Here is another of Rory's tales about the dead. A black fellow died on the Barwon, below the township of Bourke. He was buried in the ground. Two days after that a bad black fellow, named Tommy Tommy, with the help of some others, took up the body and skinned it. Tommy Tommy keeps the skin and a bone, with which he believes he can kill any one. Rory regards the conduct of Tommy Tommy as infamous. He never heard of such an outrage before.

The Krodjis and their Enchantments.—There are magicians, called by some Krodjis, but by the Murri in this quarter Dhurunmi. These men pretend to have power to throw stones so that they will go inside the bodies of those they desire to punish, and cause them to sicken and die. They also pretend to suck stones out of the bodies of the sick, and thus to restore them. When any of their people are ill, the common mode of seeking cure is to kneel down and suck a limb or side of the sick. After doing this for some time, the dhurunmi produces some stones, and declares that he has drawn them out of the patient and so procured a return of health. The young men and women regard the dhurunmi with great awe; and the fear lest, if they break their laws, the dhurunmi will inflict plagues

on them has at times a salutary effect. The office of dhurunmi is hereditary.

Recollections of Billy Murri Bundar.—Billy is an old black fellow at Burburgate. His father was Ippai Mūtē, and lived at Wundula, near the Mukai. Wāgūra was chief of the Wandula tribe; he was a leader in fights, and made laws when he chose. Billy cannot tell how he was appointed chief.

When Billy was a boy, a Burburgate black fellow, Charley, was killed by one of the Wee Waa tribe, some seventy miles lower down the Namoi. Upon this being known, a man known as Gūzguēla (charcoal), with the class names Murri Gānūr (red kangaroo), summoned the men of Burburgate to go and take vengeance on the guilty tribe. An old man called by the whites Natty (whose proper names are Yawirawiri Murri Ganur), was one of the leaders. The warriors were painted red and yellow. They were armed with spears and shields, with boomerangs, bandi and berambi (two kinds of clubs). They met near where the bridge now is, about half-way between Burburgate and Wee Waa, and, after great talk, fought till many were killed.

Traditions concerning the Stars.—Most of the information under this head was obtained from the chief of the Gingi tribe, Ippai Dinoun, called by the white people King Rory. He wears his title on a brass plate presented to him by E. J. Sparke, Esq., the owner of Gingi. King Rory is an elderly man, probably about sixty, tall, muscular, and well formed, intelligent and agreeable in his manner. I spent the 10th of July at Gingi, met Rory in the morning, and, after conversing on other subjects, got him to promise to come up in the evening and tell me about the stars.

The evening was beautifully clear. Three planets were visible: Venus, Zindigindoer (at Gundamine, on the Namoi, Venus is called Boian-gummer; higher up it is Gūnū); Mars, Gumba (fat); Saturn, Wuzgul (a small bird). The Milky-way is called Worambul (a common word, generally spelt by the colonists warrambool), a watercourse, with a grove, abounding in food, flowers, fruit, and all that is desirable. To this Worambul the souls of the good ascend when their bodies are committed to the grave, and they are supposed to be cognisant to some extent of what takes place on earth, and even to have power to help their fellow men below when invoked. For when Mr. Sparke had promised King Rory to take him to the races if the rain ceased, and the continuance of rain threatened to disappoint Rory's hopes, he appealed to his departed friends in the Milky-way, by cutting pieces of bark here and there and throw-

ing them on the ground, and crying "pu-a pu-a", until the black fellows above put a stop to the rain, and so enabled him to go to the races. This mode of obtaining fine weather he says he learnt from his fathers.

The Southern Cross is called Zūū (a shrub called by our colonists tea-tree); the dark space at the foot of the Cross is called gao-ergi (emu)—the bird is sitting under the tree. The two bright stars α and β Centauri, pointing to the Cross, are Murrai (cockatoos). The Magellan Clouds are two buralga (native companions.) Canopus is Wumba (stupid or deaf): it seems strange that the star which the Arabs regard as the eye of the Divine Majesty should be thus designated; but perhaps the very beauty of the star, tempting the people to invoke aid which was not granted, provoked them to call the charmer who would not listen to their entreaties by this reproachful name. The star is fair to the sight, but "wumba" to the prayers of the Murri. Antares is Guddar (a lizard). In the tail of the Scorpion, two bright stars across the Milky-way are called gigeriga (small green parrots) The long dark space between two branches of the Milky-way near Scorpio, is called Wurrawilbūrū (demon). The S-shaped line of stars between the Northern Crown and Scorpio is called Mundēwur, *i.e.*, notches cut in a spiral form on the trunk of a tree to enable a black fellow to climb up. The chief star in the Peacock is called Mūrgū (night cuckoo). Corona, the four stars, are called Bundar (a kangaroo); Fomalhaut—Gani (a small iguana); Spica virginis—Guriē (a small crested parrot); the Pleiades—Worrul (bees'-nest). At Gundamine, on the Namoi, the Pleiades are called Gindemar; higher up the river, at Burburgate, this constellation is called Dindīma (woman), and the Hyades Giwīr (man).

Sirius is called Zāzarī at Burburgate; Arcturus—Guembila, also Guebilla (bright red); the Northern Crown—Mullion Wollai (eagles' camp or nest), when this constellation, which is more like a nest than a crown, is about due north on the meridian. Altair, the chief star in Aquila, rises, and is called Mullion-ga (an eagle in action)—it is springing up to watch the nest. Shortly afterwards her more majestic mate, Vega, springs up, and is also called Mullion-ga. The whole vision of the nest, and the royal birds springing up to guard their young, is worthy of a place among the ancient myths of astronomy.

Benetnasch, which is visible in Sydney for a few weeks, and the next star in the tail of the Great Bear, which also appears in the latitude of Gingi, about 30°, both shone out clearly over the plain. These stars appear to us only in May, June, and July, when they rise about NNE, and set NNW, never soaring to the eyes of people here above the trees, but flying along near

the ground, their bright eyes peering into the grass and shrubs. Most appropriately, they are called Zūz-gū, the owls.

The above Report comprises the information obtained during my recent journey to the Barwon. From various quarters I expect further information concerning the languages and traditions of the aborigines, which I hope to forward to you in due time.

AUSTRALIAN LANGUAGES and TRADITIONS. By the Rev. WILLIAM RIDLEY, M.A.—No. II. (Communicated by the Earl of KIMBERLEY.)

To the Honourable the Colonial Secretary of New South Wales.

SIR,—I have the honour to return, with thanks, the manuscript Vocabulary and Grammar of the Wirradhurri Language, by the Rev. James Günther; the Vocabulary and Grammar, in two manuscript volumes, by the late Rev. James Watson; and the Report of the Select Committee of the Legislative Council of Victoria, 1858, on the Aborigines. For transmission with these, as further illustrations of the divers languages of Australia, I also send you copies of the Rev. L. E. Threlkeld's "Australian Grammar" and "Key to the Structure of the Aboriginal Language", and of the "Language of the Aborigines of the Colony of Victoria", by Daniel Bunce, Esq., Geelong. Mr. Threlkeld's works are not now to be purchased. As a sacred duty to his memory—that the fruit of his long and earnest labours among the aborigines may not be overlooked in the new and comprehensive efforts now made to collect all that can be known of the Australian race—I send the only copy at my command, the gift of the author. When the object for which this volume of Mr. Threlkeld's is sent has been accomplished, I shall, therefore, be glad to have it returned to me.

These works of the Rev. Messrs. Günther, Watson, and Threlkeld, will, I believe, be regarded by comparative philologists as most valuable contributions to the materials of their science. Mr. Günther's and Mr. Watson's treat of the same language, the Wirādhurri, or, as some aborigines pronounce it, Wirāgērē, a language spoken over a wide extent of country, from the Upper Namoi, the Castlereagh and Liverpool Plains in the north and east, to the Bawun or Darling west, and the Lachlan in the south. Many of its words are like those of the Kamilaroi, which adjoins it on the north. Like Kamilaroi, Wolaroi, Wailwun, and many other languages in that part of Australia, it is named after the negative "wirrai", variously pronounced "wīrai" and "wurrai", signifying no. Mr. Watson's

manuscript shows that he entered on the work with the hope of making a much more comprehensive collection of words than he succeeded in getting. So has it been with all who have devoted themselves to the work of obtaining a transcript of the mind and language of the Australian aborigines. The fragmentary character of such works is traceable to the fact that, in all instances, the study of the aboriginal languages has been begun among tribes already surrounded by the fatal influences of European "civilisation", including vices and diseases before unknown to them; so that before the missionary has had opportunity to complete his philological researches, the ancient spirit and character of the race have faded, and the few surviving aborigines who acquire the use of the English tongue and some of the habits of our race, can give us but an imperfect acquaintance with the language and thoughts of their fathers. To those who know anything of the difficulties of the work, the amount of information furnished by Messrs. Watson and Günther concerning the grammatical structure of the language, especially the modifications of the verbs and pronouns, is remarkable. Mr. Watson's manuscript includes dialogues illustrative of the modes of thought and expression in use among the aborigines. Mr. Threlkeld's work treats of the dialect spoken in the neighbourhood of Newcastle and Lake Macquarie; that is, the right bank of the Hunter for some twenty or thirty miles inland. I suppose this "Northumberland dialect" was not spoken over more than one-fiftieth of the extent of country over which Wiradhuri or Kamilaroi is known. But Mr. Threlkeld succeeded in forming a more complete view of that language than we have of any other. And the peculiar characteristics of the Northumberland dialect, abundant affixes, the minute modifications of the verbs and pronouns, and other forms, which Mr. Threlkeld has elaborately illustrated, have their counterparts in all the Australian languages. From these three works, and other sources, as under-mentioned, are derived the following statements concerning the traditions and languages of the aborigines.

1. *Traditions, Religious and Historic.*

Mr. Günther says, as the result of several years' converse with these people: "There is no doubt in my mind that the name 'Baiaimai' refers to the Supreme Being; and the ideas concerning Him by some of the more thoughtful aborigines are a remnant of original traditions prevalent among the ancients about the Deity." He also says that he found in what they said to him concerning Baiaimai "traces of three attributes of the God of the Bible; viz., eternity, omnipotence, and goodness." Also, that "the idea of a future state of existence is not quite extinct

among the aborigines ; although some of them speak like infidels, and will hear of no hereafter." He mentions the belief avowed by some, that "good natives will go to Baiamai when they die".* In my former report I have made similar statements of what I heard Kamilaroi blacks say concerning Baiāmē.

As an illustration of the capacity of the Australian aborigines to apprehend spiritual truth, Mr. Günther told me that an aboriginal whom he had taught to read English was once reading aloud to him the eighth chapter of the Epistle to the Romans, when suddenly he looked up from the book and said, "Mr. Günther, do you think I am walking after the flesh, or after the spirit?" The minister explained to him the meaning of the two expressions. "Then," said the man with a sigh, "I fear I am still walking after the flesh." The aboriginal who thus gave evidence of the exercise of self-judgment continued to the end of his life a devout and practical Christian.

The Author of "*Remarks on the Probable Origin and Antiquity of the Aboriginal Natives of New South Wales*," by a Colonial Magistrate, Melbourne ; published by J. Pullar and Co., Collins Street, says: "The Murray (river) natives believe in a being with supreme attributes, whom they call Nourlele. He lives in the sky, and is surrounded by children born without the intervention of a mother. Nourlele never dies ; and black fellows go to Him, and never die again." According to the same writer: "The natives of Western Australia say that when men first began to exist there were two beings, male and female, 'Wallynyup,' the father ; and 'Dovanyup,' the mother ; that they had a son named 'Bindinwor,' who received a deadly wound which they carefully endeavoured to heal, but without success ; whereupon it was declared that Wallynyup should also die, as his son had died. If Bindinwor's wound could have been healed, the natives think death could have had no power over them. Bindinwor, though deprived of life and buried, did not remain in the grave ; but rose and went up to the west, across the sea, to the unknown land of spirits, whither his father and mother followed him, and there they have ever since remained."

"The natives of the Loddon river have a tradition of a being

* Mr. Watson gives, in his vocabulary, for the word God, "Eloi". This word both he and Mr. Threlkeld adopted from the Hebrew. One reason which Mr. Threlkeld repeated to me for choosing a Hebrew name instead of the English word God, was that, unhappily, the aborigines to whom he went as a missionary of the Gospel had become familiar with the word God in profane oaths. He, therefore, preferred a word which had no previous associations in their minds to one associated with impiety. It does not seem to have occurred to either of these missionaries that there was any word in the aboriginal language which could be appropriated to this sacred use.

possessing some of the attributes of supreme power, to whom they assign the creation of the first man and woman ; the name of this being is 'Binbeal.' He made all things. He subjects the spirits of deceased persons to the ordeal of fire, to try them whether good or bad ; the good being at once liberated, while the bad are left to suffer for an indeterminate period. They also imagine that the souls of some persons pass into the bodies of certain beasts." This writer also speaks of a being named "Bonjil" or "Pundyil", supposed to have lived at the falls of Lallal, on the Marrabool river, in former days ; he is said to be now in the sky. The planet Jupiter is his fire, and is also called 'Pundyil'. At Western Port, in Victoria, it was said that at the creation a number of young men, in an unfinished state, were sitting on the ground in darkness ; when "Pundyil," an old man, at the request of his good daughter, "Karakarok," held up his hand to "Gerer" (the sun), who then warmed the earth, and made it open like a door. Then the light came. And Pundyil, seeing the earth to be full of serpents, gave his kind daughter, Karakarok, a long staff, with which she went everywhere, destroying serpents. Unfortunately, as it seemed, her staff broke before she had killed them all ; but, as the staff snapped in two, fire came out of it, and thus great good was derived from apparent evil. The people joyfully cooked their food ; but "Wang", a mysterious being in the shape of a crow, flew away with their fire, and left them in a pitiable state. Karakarok, however, restored the fire, which was never again lost.

In the year 1858, a Select Committee of the Legislative Council of Victoria took evidence, and drew up a report on the Aborigines. Most of the witnesses examined before them gave it as their opinion that the aborigines had no religious ideas. Some said they believed only in an evil spirit, or a great being who displayed his anger in thunder. But Mr. Beveridge (see p. 70 of the Report and Evidence) said : "They believe in one all-presiding good spirit"; and he gives the name of this good spirit as "Gnowdenont". He said also (p. 71) : "They have an idea of a very wicked spirit named 'Gnambucotchaly'". Mr. J. M. Allan said : "They believe in the existence of evil spirits, whom they seek to propitiate by offerings. Water spirits are called 'turong'; land spirits 'potkoorok'; another is 'tambora', inhabiting caves. These they suppose to be females without heads."

Mr. Beveridge says : "They have a name and legend for every planet and constellation visible in the heavens." Mr. Allan says : "The sun (yarh) and moon (unung) they suppose to be spirits. 'Whychurl' is their name for a star. They are much afraid of

thunder and lightning, calling the former 'murndell'. Mr. Thomas says: "They have names for the heavenly bodies. They have distinction of stars. Some of them they maintain were once black fellows, who for certain good acts were taken to heaven and made stars of." Mr. McKellar also (p. 79) says: "They do, according to their manner, worship the hosts of heaven, and believe particular constellations rule natural causes. For such they have names, and sing and dance to gain the favour of the Pleiades (Mormodellick), the constellation worshipped by one body as the giver of rain; but if it should be deferred, instead of blessings curses are apt to be bestowed upon it. They believe in the magical powers which crafty and gifted men among them attribute to themselves. Flying, the power of invisibility, and of causing death by supernatural means, such individuals are by the majority supposed to have; and the tales told of the deeds done by them exceed in wonder an Arab tale."

Not only do the witnesses examined by the Select Committee differ in their testimony as to the faith of the aborigines in a supreme being; but even Mr. Threlkeld, after his close study of the people and their language, says nothing of such a faith as Mr. Günther recognises. In illustration of this remarkable difference, it should be observed that Mr. Threlkeld's mission was on the coast, and Mr. Günther's two hundred miles inland, and westward of the dividing range. I have found the blacks of the interior generally more intelligent and mild than those near the coast. At Moreton Bay, although I was told that the name "Mūmbal" (thunder) was used as the name of the Supreme, I could not gather from the aborigines any such distinct tradition as that of the Kamilaroi tribes, concerning Baiaine. Whether, as is said by the tribes in the north west of Australia, the worst part of the people were driven eastward and southward (a tradition confirmed to me on the Bawun, by King Rory of Gingi), and so the most depraved of all settled on the eastern and southern coasts; or whether fish diet has a bad effect on those who depend on it, it is certain that the finest black fellows, physically, morally, and even religiously, are to be found westward of the dividing range.

Traditions of the North West Coast.—Andrew Hume, a prisoner in Darlinghurst Gaol, who affirms that he travelled in 1863 from the northern tributaries of the Darling to the western coast of Australia, related to me the following traditions. Hume has been severely cross-examined by persons acquainted with that part of the country over which he says that he travelled, and they arrived at the conclusion, to which I have also come, from a comparison of the words he professes to have learnt from the aborigines with those known to me, that on the whole his statements may be relied on as containing, at all events, some

truth. I am sure no one who had not spent much time among the aborigines would ascribe to them such words and ideas as those which Hume repeated to me, and which will be found in this report. Hume says he heard the blacks near the western coast telling these stories to one another and to him as they sat round their camp fires.

1. The first people who ever came to this land were four men and four women. These eight persons came in a canoe from the East. Before they reached this country they went to a very rich island, where they were not allowed by the inhabitants to remain. They then came on to the north western part of Australia. After they had been in this country some time, two of the women began to wish to return to their native land; when they expressed their wish, the men strongly opposed them. Having in vain sought the consent of their husbands, these women took the canoe secretly, and went out to sea by themselves. When their flight was discovered, one of the husbands prayed to his god to bring them back. The god, in compliance with his prayer, went after the women and threw stones first on one side of the canoe then on the other, to turn them back. Finding this did not deter them from pursuing their way, he grew angry and threw a large piece of rock down upon the canoe, which caused their death. The two men who had lost their wives in this manner were advised by their brothers to go back to their native land, and get new wives there. But the two widowers seeing that two of their brothers' daughters were now of a marriageable age, carried them off contrary to law (a law strictly maintained to this day over the north western districts of New South Wales), and made them their wives. For this transgression, marrying their own nieces, they were driven southward into a cold country. There they sinned more and more; and as a further punishment, were driven into the central parts of the continent, where there was scarcely any water. The descendants of the two erring brothers had multiplied; but in that parched country, drought prevailing, many of them perished.

The righteous people, "inyaoa", who remained in the north west, were grieved for the misery of their kindred, and prayed that they might be forgiven. They were pardoned, and allowed to settle in peace all over the country. But because of their transgression they were not allowed to speak the same language as the righteous people. This was the origin of the division of languages. To this day the blacks of the north west call themselves "inyaoa" (the righteous), and all other Australian aborigines "karnivual" (bastards).

2. After some people had settled in this country, two brothers came from another land; one of them was good, the other bad.

The bad one conspired with some of the other people to drive out his good brother. But the good one resisted them, and in the conflict called on the fire god, Thilkuma, to help him. Thilkuma came down and burnt up a part of the army of evil doers; he then advised the good brother to go back and possess his own land in peace, promising to come at his call if at any time he needed help against evil doers. But the man becoming greedy after his victory, despised this good counsel, and having persuaded others to join him, fought and killed many blacks, and took possession of their country. He was still continuing the fighting when he fell sick. In his sleep the fire god appeared to him, and threatened to destroy him unless he desisted from killing men, but promised to protect him if he went back peaceably to his own country. Still he persisted in attacking his neighbours. They in their trouble cried to Whaigugan, their god, who came to their help, and drove the invader back.

Then the people, to prevent future aggressions, fixed the boundaries of their respective territories by rocks, trees, rivers, and mountains. And the rule was made that, if any strayed beyond their proper boundaries, they must go through the ordeal of having a certain number of spears thrown at them. If untouched by the spears, they were to be allowed to go away; if wounded, they were to be killed. From that time also, they made different marks on their breasts and arms to distinguish the tribes.

In one part of the country, Hume says the people believe in four deities: Munnuninuāla, the chief god* in the highest heaven; Thālizkiawun, his wife; Mulgīanuz, her sister; and Mundūala, also called Thilkuma, the fire god. This Mundūala is the author of plagues and other penal visitations. When people die, they pass from one to another of these gods. The bad are consumed in the penal fires of Mundūala; the good pass upward from one to another, until they reach Munnuninuāla, and live with him in a land of peace and plenty.

These people call the bora, or ceremony of initiation into the privileges of manhood, "burgoin". The proceedings are much the same as those practised in Eastern Australia. But, instead of the sacred wand Dhūrūmbūlūm, known on the Namoi and Barwon, they have a sacred stone, Mulidhārum, or Mūli inabūtha dhārum (the stone with a great light), which is exhibited to the young men at the burgoin, and is also used to exorcise evil spirits.

They bury their dead in a sitting posture, with their hands folded in front of their knees. The grave is so shallow that

* In another part of the west country the name of the Supreme is Baigamir.

when the body is placed in it, about half of it is above the level of the surface of the ground. When the corpse is put into the grave they dance around it, and each of them whispers in the ear of the dead, "Thaul knoibia thaul murriz goriz Dhu; niomai timai buli, andua kaian buldugana; *i. e.*, Tell all the people, tell my brothers, I am coming to God; I am doing what they told me on earth; I am coming soon; kiss all for me."

As the art of kissing is not known by the aborigines of Eastern Australia, I think some other mode of salutation is meant by the words used. With a belief that Hume's statements are true in the main, I think he has filled up gaps in memory by the aid of imagination. Hume's account of the fire-god corresponds with the evidence of some witnesses in Victoria.

A Legend of Stars.—It has been reported in the newspapers of this colony that the aborigines on the Murray River have told the following story concerning the two stars in Centaur that point to the Southern Cross.

A large flock of birds called plain turkeys (buzzards) used to assemble every evening on a plain near the Murray River, and there dance round and round. But an old bird of cannibal propensities took the opportunity, when he saw them wearied with the sport, to pounce on a young bird and devour it. This he did again and again, till the leaders of the flock, grieved at the loss of the victims, proposed that they should all abandon the spot and migrate to another plain. The whole flock were gathered together in sorrowful consultation, when two strangers, birds of the same species, came up and inquired the cause of their dejection. The matter was explained to them. The two strangers recommended them not to leave their home, and promised to deliver them from their enemy. The flock accepted with confidence their counsel.

The next evening, therefore, they went to sport as usual on the plain; while one of the strangers hid himself in the bushes, near the lurking-place of the old murderer, and the other joined in the dance. After a time, this last began to feign weariness, and, after limping along, sank upon the grass, and opening his beak, panted in mock distress just in front of the old bird, who was watching for his evening prey. The cannibal, thinking himself secure of the victim, rushed from his hiding-place and attacked the panting stranger. This bird sprung up and boldly encountered his assailant; and, while they were fighting, the other stranger advanced to the help of his comrade, and the two soon overpowered and killed the enemy.

The other birds gathered round to see the death of their cruel persecutor, and applauded the generosity and courage of their deliverers. When the work was over, they unanimously

besought the two hero-buzzards to rule over them. But the strangers declined the honour, and mounting up from the midst of the admiring throng, rose higher and higher until they were fixed in the evening sky as the two brightest stars that circle round the South Pole.

2. *Words and Grammatical Structure in Different Languages.*

(See Table, p. 284.)

After repeated and prolonged interviews with Andrew Hume, from whom I took down the words in the eighth column, I believe his statements are in the main true; that he has lived with many tribes to the westward of the Balonne, and has given me words spoken by them. In some instances he has perhaps supplied the want of memory by the exercise of his imagination; and such words as "milkiwina" (milky weaner) for mother, suggest the probability of spurious coinage. In some words he used the letter *s*, a sound unknown in Eastern Australia. This sound he may have taken by mistake for that of *th*, or *j*, or *rr*, as the colonists have called Breeja "Breeza", Yárr "Yass", and Wálger "Walgett". This man may render valuable service to the cause of science, if he revisits, as proposed, the spot where he saw a solitary member of some lost exploring party among the blacks, and brings back the buried journal of the explorers. I cannot throw off the impression that there is truth in his narrative, though it may be coloured by some invention. He gave me, besides the list of words, the following sentences:

Come here,
Let us go,
Go on,
Sit down,
Where have you been?
I have been out on the plain,
Give me a drink,

dímuarha or daizguneraha.
yanika narnig.
gunar.
taikar digua.
kaibágtreer.
we para ledun.
kalín kulán dhariz.

Of four brothers the first is "thulguiana"; the second, "gului-zindai"; the third, "mindulai"; the fourth, "thābutū". According to Hume the language spoken on the Nogoia River is "Tulumoa". In this language the sun is "dūniba"; the moon, "keluna"; a black fellow, "ūpūndha"; a woman, "inator".

The language of the Culgoa is "Muruworri"; a language near the north coast is "Kalinupa"; and that of the western coast is "Thelūwūpānā". Mr. Richard Thatcher, now of Musclebrook in this colony, who resided for some months at the Pearl fisheries on the north-west coast, gives (in the *Sydney Morning Herald* of 19th July, 1871) the following words (on p. 289), as spoken on that coast, from Tien-Tsin Creek, Butcher's Inlet, or Port Walcott, to eastward some fifty miles.

WORDS AND GRAMMATICAL STRUCTURE IN DIFFERENT LANGUAGES.

ENGLISH.	NEW SOUTH WALES.			QUEENSLAND.		VICTORIA. (D. Bunce.)	WEST COAST. (A. Hume.)
	KAMILAROI. (W. Ridley.)	WIRADJURRI. (J. Gunther, J. Watson.)	NORTHUMBER- LAND. (L.E. Threlkeld)	TURRUBUL. (W. Ridley.)	DIPPIL. (W. Ridley.)		
Fire	wi	guyaz	koyuz	kuddum <i>or</i> kui-girā yim	girā	weenth (winth)	nirtala,* wullun
Water	kollo	kāliz <i>or</i> kara- mara	kokoin	tabbil	kōz	callignee (ka- lizi)	kolinutūwā kulbun
Salt water (dead water Earth	...	...	...	tabbil boz	tizzir	...	...
Man (<i>Latin var</i>)	giwir	gibbir	purrai	tār <i>or</i> durran	dao'r	beek (bik)	daggin, tharūda <i>or</i> nūnala
Boy	birridul	gibbir	kore	duggai	dant	cooleenth (ka- lith)	giul, maion
Girl	mie-dul (little)	birrin	...	mualum	skhunn	yanyoan	būnia
Woman	inar	inargang inar	nukuz	yarrunkun jūndal	yirum	moonmoondiek baggarook (bag aruk)	yinadial ginua, inorma
Child	kai	wanggai	wonnai	nāmmul	methindum	booboop	wūnāra, wika- thiari
Father	būbā	babbīn	hiyungbai	biz-bābā	bobbīn	marmoonth	buben yambu- ana
Mother	zumbā	gūnnitsang	tūnkun	pūjāz	zāvāz	parbine	gusma milka- wina
Brother	daiadi gullami	kagang	bingzai	zubaza duazal	mūn & wadhaz	wunthulong	hurgūn
Sister	boadi <i>and</i> būri	mugan	...	dadi & muzukul	yaobun	mollokin	wingren
Aboriginal	murri	...	...	tyan	dān	cooleenth	...
White man, or ghost	or wunda	...	...	magui <i>and</i> mud- har	mukoron	...	...
Head	kaoga	ballang	wollung	migul	kān	cowong	balgūn

Eye	mil	yai kung	mil, mie	mi	mirring'atha	aiyia
Nose	muru	nukoro	muro	muru	cong'atha	zulu
Mouth	illo (<i>lips</i>)	kururuka	tambaru (<i>lips</i>)	tanka	worong'atha	malu
Teeth	yira	tira	tier	...	cong'atha	tihia
Chin	tail	wattun	...	yikil	n'gondook	kunuka
Ear	buina	zureung turrur-	pidna	biuuz	kidnong'atha	wula
	tegul	kurri	kabui	dhella	yarra-gong'atha	giddoz
Hair	...	burruug	...	...	yarragondock	garguij
Beard	yare	yarei	yeren	yeren	koorn	gulgua
Neck	nun	kulleung	yurrun	gina	bargarro	kimbika
Shoulder	wolar	mirrung	kika	kora	thirrock	bage
Arm	buzun	kopa <i>upper-A.</i>	taron	...	thirong'atha	thurruz
Leg	poyn, or buiyo	turrung <i>lower-A.</i>	puiyo	puiyu	thirrong	gahwinda
Thigh	durra	bulloinkoro	durra	durran	thorono	dabir
Belly	mabal	purung & warra	tiggeri	durun	greenong'atha	gilinta
Foot	dinna	yullo	tidna	jinnuz	...	dinar nula
Paddymelon	murruira	...	...	...	moongoobera	kuna
Pigeon	tamur	moane	...	tamur	...	dibisolaz
Kangaroo†	bundar	...	kuruman	kooman	gudara kondula	gudara
Wallaby	burrai	...	...	...	...	wuraba
Opossum	mate	willai	kubbiſ	narambi	...	willo yikai
Emu	dinoun	kongkoring	zui	zardim	...	murruun thula
Crow||	waru	wakun	wowul	...	wa'ang	wuggir
Cockatoo	biloela	kearapai	kalyar	kiggum	mayook	gwahir
Magpie	...	...	...	...	barroworn	kurvar
Turkey (buzzard)	karu or karro	...	...	wagna	...	gumbal
Wild duck	gambal	pirama	za	nar	toolame	wumbibuz nial
Diamond sparrow	thuller, &c.	...	...	...	...	bujegara
Brown snake	yarring-gang	...	yūm	...	coornmill	jorun
	yubba	...	...	...	...	...

ENGLISH.	KAMILAROL.	WIERADHURRI.	NORTHUMBER- LAND.	TURRUBUL.	DIPIL.	VICTORIA.	WEST COAST.
Deaf adder (or)	mundar	...	tombiribe-en	...	munulgun	...	wurroloz
Death	birrā	birgang	...	...	pinym	path'oron	gurbān
Grub	...	warrathanang	...	...	...	...	wūndin
Devil	...	...	...	...	...	...	kulhian
Nat. companion	bholga	yurruga	pammul	bigi	...	noweenth, **	ira
Sun	yara	...	...	killen & kākuri	...	yārā	gisarān
Moon	rille	giwang	...	mirregin	...	meniyān	jeruloz
Star	mirri	girralang	...	birra	...	whyecul	naroz ymāla
Sky	ganagulla	warrubir	...	...	...	boorun	mirgāra
Light	...	yallan & yirrin	...	...	...	noweenth dur-	murunij
Night	yārū	yurring	...	zunna	...	ran duran	gigārun
Air	...	...	...	...	...	booronthooith	wurumbārai
Thunder	tulumi	murrubarrāi	mato	māgara	māmā	drumbullabull	...
Lightning	mi	miggi	pinkun & wottol	tuḍnagain	billibirā	...	urnijo
Wind	maier	girrar	...	...	...	...	milbian
Dew	...	gwong & igurra	...	...	...	noormoot	barluga
Frost	tundar	kallandar	...	...	...	wyeoboo be'anth	bār
Grass	goitōr	gurrūz-gal	...	...	...	dumbalk	pāgān
Honey	wadel	zarru	wolyo	buzgil	...	poath	naraz
Milk	...	gurrong	...	...	kobbai and gilla	...	wilbian
Axe	yūnda	bagain	...	...	...	brimbrim	burgān
Wood	tula	zubbun	baibai	...	muyim	...	buldāna
Hut	kūndi	gullur	...	...	durabunnn	...	gurbār
Bark	tārā	dhurrang	...	...	kumba	...	tūraz
Mountain	kubba	dhirran	...	...	walker	...	thurim
Sea	...	murrian	...	...	...	n'gorack	thizgun
Cloud	yuro or yurru	yurring	yareil and yurā	...	mirrin	warrain	kuloara
Meat	di	dhin	kara	...	...	lark	bulgana
				...	...	bulgana	din

District Love	tāorai kaiai	yarruin	...	...	...	mirambeek quinquee mono- meeth	minyunka- minaina
Jealousy	bul	thallai	...	...	...	...	kilumpāka gurindier gimā
Anger	yili	...	...	...	...	...	...
Hope	...	...	...	...	...	...	...
Hand	murra	murra	...	...	durin (<i>right</i>) wottuzga (<i>left</i>)	myrong'atha	keliza
Pelican	gulumboli	...	karóngkaróng	...	zirizga dirai yiriki (<i>morn- ing star</i>)	...	gānzakun bulaburra
Evening star	...	...	...	...	...	...	...
Alive	moron	muradhurei	...	...	...	mumbull	yūn mūnara (Mr. Thatcher)
Dead	bālān	balluin	...	...	...	...	koonjery [kan- jiri]
One	māl	yunbai and mul- landa	wakol	...	...	earnboo	kooterah terā]
Two	bālār	bulia	buloara	...	...	columbula	...
Three	gālibā	bullazunbai	zōro	...	...	columbula pia	...
Yes	yo, or gir	zawa	e-e and kawoa	...	yo-ai	um un	maroh yiluz
No	kanil	wirrai	keawaran	...	kabbi	n'uther ja'alburt	gaw tawupoon
Wheat	bumala	bumarra, būmara	...	...	...	...	...
To eat	tālī	thalmarra	tukilliko	...	...	thang'arth noobuek	yapika kalintā
To drink	zārugī	widyarra	pittuliko	...	...	brimbynthon	taluwun-unda
To find	...	yamminya	bummilliko	...	...	mirring	ākwan
To hear	wīnuzi	winnangarra	...	...	baigin	ja'alburt	kākūna
To kill	balubūna	balubummarra	...	...	...	...	...
To run	bunnazunne	balubunirra	...	...	bitelle	yeetho yonarra	kilterāna
To see	zummi	zanna	nakilliko	...	muniin	buck	mirambiak nan- tinua
To sleep	bābi	yurrai winiya	zarabo	...	mibon	gooth umina	nitalbi

ENGLISH.	KAMILAROI.	WIERADJERREL.	NORTHEMBER- LAND.	TURRUBUL.	IPPPI.	VICTORIA.	WEST COAST.
To stand	warine	warranna	zarokilliko	..	..	..	taiwult
To love	...	zarinubarra	...	..	..	..	maiwata
To hate	...	wiambullinya	...	..	..	ballarto nud laar	milbawa
North	...	ballimo (<i>noon</i>)	...	..	..	..	dunigilina
South	...	...	...	..	..	..	kiwuntawali
East	...	thirru-gal, or girang-gun	...	..	..	..	dinukala
West	...	thurbuananua	...	..	..	..	jinkimialowa
Class Names of Men.	Murri Ippai Kumbo Kubbi	...	...	Derwain++ Bundar Bundar Bundar Baraz	Derwain++ Bundar Balkon Tandor Baraz	..	Girial
Class Names of Women.	Matha Ippatha Batha Kubbotha	...	...	Derwaizgun Bundarun Bundarun Bundarun Barazgun	Derwaizgun Bundarun Balkoizun Tandorgun Barazgun	..	Izua
						..	Nailana
						..	Manudhaka
						..	Ithithia
						..	Muyan
						..	Imithwa
						..	Ilawaina

won it is a class name, and one subdivision of the Kubbi is Kubbi nute (nute meaning opossum there).

According to A. Hume, the words for crow from the Balonne westward are waga, woggun, nallidha, dhaikwundha, kagilmurra. In Kamilaroi, kagilmurra is bad hand.

The same witness says the native companion (crane) is burralge as far as the Maruoa; then burndhankire, dunagalazka, kalutan. ** In nowenth (sun or light), -wenth is fire.

†† I do not know which of the four Turrubul or five Dippel names answers to Murri, etc.

* At the Gulf of Carpentaria, fire is "tilar". Hume gave the following words signifying fire in thirteen (out of twenty) languages spoken between the Balonne and the western coast, some twelve hundred miles. The words are in the order in which they are used, beginning on the Balonne and going westward: Wi, muddhi, baddhi, melaca, nūāna, gerul, thumuduka, mulyaiga, goudaluka, waidindya, pulwitya, merial, niniatā.

† "Dān" was given as the word for man, but I think it is the distinctive name of the aboriginal man.

‡ Kangaroo is "kubbothiwed" on the Paroo.

§ "Kubbi" is opossum at Moreton Bay; on the Namoi and Bar-

Man	nunkaberry	Fire	karlow
Eye	toolah [tula]	Smoke	kumbrah
Nose	moolah [mūla]	Rock	mundah
Foot*	jinnah	Stick	bonah
Girl	beeby or kore, [bibi kore]	Sand	nano
Horse	yowerdah	Grass	warrabah
Dog	wonjee	Salt water	hurry baba
Bird	moolah	Ship	yandlebrah
Sheep	cokinjoy	Shells	weery
Bread	murrah	Beef	bullama (<i>bullock?</i>)
Sun	yandro	Anchor	tungatunga
Moon	wheelharo	Work	nihilgo
Evening	toondoo	Spear§	peelharo [pilāro]
Wind	tooroo	Knife	chimberary
North	yabroh	Little way	moonah moonah
South†	chinki	Plenty	mara
East,	eurajoh	Eat	bijalgow
West	woolagoo	Bring	kolbro
Name	inne	Living at	banamah
Liar	peeah	Sleep	bumbah
Quick	moriente	Handle	wandy
Tired	werrigo	See	nakarow
Sick	kundego	Drink	pinjalgow
Full	weenyah	Come here	koki
Big	mammah	Take	takalgow
Angry	badgah	Let go	tian mah
Affraid	wyah [wai-a]	Hit	taljero
Good‡	koonaberry or marajunah	I	nijer
Slow	chik-a-chik	Understand	wangaberry
Yes	coh	Don't know	mundy wy
No	meta	Sing	tabby
Now	echela	Which?	nullah
		You	yinko

Note on the Inflections and Affixes of Verbs.—In connexion with that remarkable feature in the grammar of all Australian languages, the multifarious and exact inflexion of the verbs, I find in a specimen sent to me by Mr. Andrew Mackenzie, of Moelly, Wandandian, that in the language of the Shoalhaven district, differences of tense and mood are indicated by a change in the penultimate vowel. In Kamilaroi, etc., these differences are shown by additional syllables, not by changes in the vowel. Thus, from the root “bumal” (beat) come the future “bumalle”; imperative, “bumalla”; causative, “bumal-mulle”; permissive, “bumana-bille”; “zummil” (see); “zumville” (will see); “zummil-mulle” (cause to see, shew). But Mr. Mackenzie gives “paiaga”, I strike; “paiūga”, I will strike; “paiāna”, he strikes; “paiūna”, he will strike; “paianu,” you two strike; “paiūnu”, you two

* Foot is Dinna in Kamilaroi, Geenong’atha in Victoria; the same root all over Australia.

† A. Hume gives Jinki-malowa for West, and derives it from Chinki, Blood (red of sunset).

‡ Good is Murruba in Kamilaroi.

§ Spear is Pilar in Kamilaroi, and Pilum in Latin (plural, pila).

|| Understand is Winuzá in Kamilaroi.

will strike; “pailū”, you two struck; “paiirru”, strike ye two; “pailaora”, they two struck; “paiūnūradtha”, let those two strike. I noted a similar feature, change in the penultimate vowel, in Turrubul, spoken at Moreton Bay, in Queensland, about six hundred miles northward of Shoalhaven. There “bulkurri” is come; “bulkairi”, cause to come, bring.

Resemblances to Aryan Languages.—Before closing this Report, I would call attention to a few remarkable coincidences, perhaps they are nothing more, between Australian words and those of the Aryan nations.

The formation of cases by inflexion reminds one of Latin and Greek, and the affix *di*, *from*, is like *de* and *θι*. The formation of the feminine names from the masculine by adding *ta*, Ippata sister of Ippai, Kubbotha of Kubbi; is like the change from Julius to Julia; and both at Wide Bay, in Queensland, and on the western side of the Balonne, four hundred miles inland, about 30° south (in “Dippil” and “Kogai”), the feminine name is formed from the masculine by adding *gun*, as Derwain, Derwaingun; Baraz, Barazgun; Wungo, Wungogun; Obūr, Obūrūgun; Urgilla, Urgillagun; and Unburri, Unburrigun. Is not this syllable *gun* the *gin* or *gyn* found by the first settlers in this colony as the name of woman, and mispronounced by white people as “jin”? Is it not γυνή? At all events, I heard on the Namoi the word of affection addressed by aboriginal children to their mothers, gūnī, sounding exactly as we pronounce the word handed down to us by the Evangelist St. John, as the title addressed by the Saviour of the world, when He was hanging on the cross, to His mother, γυνή.

KAMILAROI.

Pīlār, Spear; in Latin, Pilum.

Pindele, to hang; Pendo, Pendeo (Pindemulle = Pendo, Pindele = Pendeo).

Būbā is Papa, a universal word.

Murri (great) allied to “murru” and “murruba” (good), with cognate words in almost all Australian languages, is like major, and the “more”, “mure”, “muir”, “murray” of the Teutonic and Gaelic languages, “winuz” (know) suggests “witan”. Near Sydney we have the towns of Parramatta (by the waters of the river) and Cabramatta (higher up the waters). Some imagine they hear in these *παπα ὕδατα* and *ὑπερ ὕδατα*.

If, as Professor T. K. Key, my honoured guide in Philology, has said, the Roman “v” was sounded as “w”, the Kamilaroi word “gīwir” meaning exactly “vir”, may be the same with a prefix. “Yo” is yes in Kamilaroi and in Teutonic.* But my business

* The name Kamilaroi—in various forms Cummilroy, Commeroy, Gunnilaroi—has been used in all parts of this colony, ever since its first settlement, as the name of a great people spread over the country northward of

is to furnish information, not conjectures. In addition to the works above named, I enclose a copy of my "Gurre Kamilaroi".

The DIRECTOR then read the following Report of the Arctic Committee, drawn up by Mr. Clements Markham, C.B.

To the Council of the Anthropological Institute of Great Britain and Ireland.

YOUR Committee, to whom was referred the annexed letter from the Royal Geographical Society, have agreed to the following Report:—

24th May, 1872.

SIR,—The President and Council of the Royal Geographical Society, after a careful consideration of a Report drawn up by a Committee of Arctic Officers* belonging to their body, having come to the conclusion that the time has arrived for once more representing the important results to be derived from Arctic exploration to Her Majesty's Government; I have been directed to request that the following remarks may be laid before the President and Council of the Anthropological Institute.

In a letter to me signed by Mr. George E. Roberts, and dated May 8th, 1865, he was instructed to say that the Council of the Anthropological Society viewed with the deepest interest the prospect of an Arctic exploring expedition; believing that great advantage to their science would ensue from such an undertaking.

Strengthened by the willingness expressed by the Council of the Anthropological Institute to cooperate with the Royal Geographical Society in adopting such measures as might be considered advisable to induce Her Majesty's Government to accede to the proposal of fitting out an Arctic expedition, and by other expressions of cordial approval received from kindred scientific Societies, Sir Roderick Murchison brought the subject of North Polar exploration to the notice of the Duke of Somerset, then first Lord of the Admiralty, in a letter dated 19th of May, 1865; and the subject was discussed between his Grace and a deputation from the Council of the Royal Geographical Society, in an

the earliest home of the English at Port Jackson. The first colonists were told that the Commeroy would come down from the north and sweep them away. And, after all the wasting of the race, Kamilaroi-speaking aborigines are numerous and very widely spread. Whence the name and the people compare Kamilaroi, Cummilroy, Commeroy, with *Κυμμεριοι*, Cumbri, Cimbri, Kymri.

* Sir George Back, Admiral Collinson, Admiral Ommanney, Admiral Sir L. M'Clintock, Admiral Richards, Captain Sherard Osborn, Dr. J. Rae, Mr. A. G. Findlay, Mr. Clements Markham (sec).

interview which took place on the 20th of June in the same year.

But at that time there was some difference of opinion among Arctic authorities on the subject of the best route to be adopted, and the Duke said that he would wish to be in possession of the results of the Swedish Expedition then engaged in exploring Spitzbergen, and of other information, before he could recommend an Arctic exploring expedition to the consideration of the Government.

In consequence of the view taken by his Grace, the Council of the Royal Geographical Society have carefully watched the results of expeditions undertaken by foreign countries, in order to be in a position to recommend one route as undoubtedly the best, before again pressing the subject upon the attention of the Government. Seven years have now passed, and during that time additional experience has been accumulated by the Swedes and Germans, which has enabled the Council to form an opinion that justifies a renewal of their representation made in 1865. The distinguished Arctic officers who are Members of the Geographical Council, and who have carefully considered the evidence accumulated since 1865 in a special Committee, are now unanimously of opinion that the route by Smith Sound is the one which should be adopted with a view to exploring the greatest extent of coast line, and of securing the most valuable scientific results. The conclusion thus arrived at by authorities of such eminence, has placed the Royal Geographical Society in a position which will enable its Council to represent to the Government that the conditions are now fulfilled which the first Lord of the Admiralty deemed essential in 1865, before he could entertain the project of North Polar Exploration.

I am, therefore, instructed to represent the very great importance of stating the scientific results to be derived from the exploration of the unknown North Polar Region in full detail, even in a first preliminary communication to the Government. It is believed that the success of any representation will depend to a considerable extent on the force and authority with which that portion of it is prepared, which enumerates the scientific results to be derived from the proposed expedition. I am to request that you will submit these views to the President and Council of the Anthropological Institute, and that they will be so good as to cause a statement to be drawn up and furnished to the Council of the Royal Geographical Society, embodying their views in detail, of the various ways in which the Science of Anthropology would be advanced by Arctic exploration.

I enclose for the information of the President and Council of the Institute, copies of a memorandum which has been prepared upon the subject, and of the papers which were read by Captain

Sherard Osborn in 1865 and 1872, advocating a renewal of Arctic exploration.

I have the honour to be, Sir, your obedient Servant,

CLEMENTS R. MARKHAM.

To the Secretary of the Anthropological Institute.

REPORT of the ARCTIC COMMITTEE* of the ANTHROPOLOGICAL INSTITUTE.

THE knowledge already acquired of the Arctic Regions, leads to the conclusion that the discovery of the unknown portion of the Greenland coasts will yield very important results in the science of Anthropology. Although barely one half of the Arctic Regions has been explored, yet abundant traces of former inhabitants are found throughout their most desert wastes, where now there is absolute solitude. These wilds have not been inhabited for centuries, yet they are covered with traces of wanderers or of sojourners of a bygone age. Here and there, in Greenland, in Boothia, on the shores of America, where existence is possible, the descendants of former wanderers are still to be found. The migrations of these people, the scanty notices of their origin and movements that are scattered through history, and the requirements of their existence, are all so many clues which, when carefully gathered together, throw light upon a most interesting subject. The migrations of man within the Arctic zone give rise to questions which are closely connected with the geography of the undiscovered portions of the Arctic Regions.

The extreme points which exploration has yet reached on the shore of Greenland, are in about 80° on the west, and in 76° on the eastern side; and these two points are about 600 miles apart. As there are inhabitants at both these points, and they are separated by an uninhabitable interval from the settlements further south, it may be inferred that the unknown interval further north is or has been inhabited. On the western side of Greenland it was discovered, in 1818, that a small tribe inhabited the rugged coast, between 76° and 79° N.; their range being bounded on the south by the glaciers of Melville Bay, which bar all progress in that direction, and on the north by the Humboldt glacier, while the *Sernik-sook* or great glacier of the interior, confines them to the sea-coast. These "Arctic Highlanders" number about 140 souls, and their existence depends on open pools and lanes of water throughout the winter, which attract animal life. Hence, it is certain that where such conditions exist man may be found. The question whether the unexplored coast of Greenland is inhabited, therefore, depends upon

* This Committee consisted of Sir John Lubbock (President), Professor Busk, Captain Sherard Osborn, Captain Bedford Pim, Col. Lane Fox, Mr. Clements Markham, Mr. Flower, and Mr. Brabrook.

the existence of currents and other conditions such as prevail in the northern part of Baffin's Bay. But this question is not even now left entirely to conjecture. It is true that the "Arctic Highlanders" told Dr. Kane that they knew of no inhabitants beyond the Humboldt glacier, and this is the furthest point which was indicated by Kalahierua (the native lad who was on board the *Assistance*) on his wonderfully accurate chart. But neither did the Esquimaux of Upernavik know anything of natives north of Melville Bay until the first voyage of Sir John Ross. Yet now we know that there either are or have been inhabitants north of the Humboldt glacier, on the extreme verge of the unknown region; for Morton (Dr. Kane's steward) found the runner of a sledge made of bone lying on the beach on the northern side of it. There is a tradition, too, among the "Arctic Highlanders," that there are herds of musk oxen far to the north, on an island in an iceless sea. On the eastern side of Greenland there are similar indications. In 1823, Captain Clavering found twelve natives at Cape Borlase Warren in 76° N.; but when Captain Koldewey wintered in the same neighbourhood in 1869 none were to be found, though there were abundant traces of them, and ample means of subsistence. As the Melville Bay glaciers form an impassable barrier, preventing the "Arctic Highlanders" from wandering southwards on the west side; so the ice-bound coast on the east side, between Scoresby's discoveries and the Danebrog Isles, would prevent the people seen by Clavering from taking a southern course. The alternative is that, as they were gone at the time of Koldewey's visit, they must have gone north.

These considerations lead to the conclusion that there are or have been inhabitants in the unexplored region to the north of the known parts of Greenland. If this be the case, the study of all the characteristics of a people who have lived for generations in a state of complete isolation, would be an investigation of the highest scientific interest.

Light may not improbably be thrown upon the mysterious wanderings of these northern tribes, traces of which are found in every bay and on every cape in the cheerless Parry group; and these wanderings may be found to be the most distant waves of storms raised in far off centres, and among other races. Many circumstances connected with the still unknown northern tribes may tend to elucidate such inquiries. Thus, if they use the *igloo* they may be supposed to be kindred of the Greenlanders; snow huts will point to some devious wanderings from Boothian or American shores; while stone *yourts* would indicate a march from the coast of Siberia, across a wholly unknown region. The method of constructing sledges would be another indication of

origin, as would also be the weapons, clothes, and utensils. The study of the language of a long isolated tribe will also tend to elucidate questions of considerable interest; and its points of coincidence and divergence, when compared with Greenland, Labrador, Boothian, and Siberian dialects, will lead to discoveries which, probably, could not otherwise be made. Dr. Hooker has pointed out that the problem connected with the Arctic flora can probably be solved only by a study of the physical conditions of much higher latitudes than have hitherto been explored. In like manner, the unsolved puzzles connected with the wanderings of man within the Arctic zone may depend for their explanation upon the clues to be found in the conditions of a tribe or tribes in the far north.

These are speculations which the results gained by Polar discovery would probably, but not certainly show to be well founded. But there are other investigations which would undoubtedly yield valuable materials for the student of man. Such would be carefully prepared notes on the skulls, the features, the stature, the dimensions of limbs, the intellectual and moral state of individuals belonging to a hitherto isolated and unknown tribe; also on their religious ideas, on their superstitions, laws, language, songs, and traditions; on their weapons and methods of hunting; and on their skill in delineating the topography of the region within the range of their wanderings. There are also several questions which need investigation, having reference to marks and notches upon arrows and other weapons, and to their signification. A series of questions has been prepared by Dr. Barnard Davis, Mr. Tylor, Col. Lane Fox, and others, on these and other points,* attention to which would undoubtedly result in the collection of much exceedingly valuable information.

The condition of an isolated tribe, deprived of the use of wood or metals, and dependent entirely upon bone and stone for the construction of all implements and utensils, is also a subject of study with reference to the condition of mankind in the stone age of the world; and a careful comparison of the former, as re-

* 1. Instructions of Dr. Barnard Davis.

2. Enquiries as to Religion, Mythology, and Sociology of Esquimaux Tribes, by E. B. Tylor, Esq., F.R.S.

3. Enquiries relating to Mammalia, Vegetation, etc., by W. Boyd Dawkins, Esq., F.R.S.

4. Enquiries into Customs relating to War, by Col. A. Lane Fox.

4a. Enquiries relating to certain Arrow-marks and other Signs in use among the Esquimaux.

4b. Enquiries relating to Drawing, Carving, etc., by Col. A. Lane Fox.

5. Enquiries as to Ethnology, by A. W. Franks, Esq.

6. Enquiries relating to the Physical Characteristics of the Esquimaux, by Dr. J. Beddoe.

7. Further Ethnological Enquiries, by Professor W. Turner.

8. Instructions suggested by Captain Bedford Pim, R.N.

ported by explorers, with the latter, as deduced from the contents of tumuli and caves, will probably be of great importance in the advancement of the science of man.

For the above reasons there cannot be a doubt that the despatch of an expedition to discover the northern shores of Greenland would lead to the collection of many important facts, and to the elucidation of deeply interesting questions connected with anthropology.

APPENDIX.

QUESTIONS FOR EXPLORERS.

(With Special Reference to Arctic Exploration.)

I.—GENERAL. By J. BARNARD DAVIS, M.D., F.R.S.

1. *Names of Tribes*, indicating their divisions, and at the same time marking any peculiarities of any kind which distinguish them. This will embrace Tribal marks.

2. *Stature of Men and Women*.—For this purpose the traveller should be provided with a measuring-tape or other instrument. Measure twenty-five of each, if he can.

3. *Colours of Skin, Eyes, and Hair*.—These are easily determined by Broca's Tables.

4. *Hair, Texture of and Mode of Wearing*.—Specimen locks, tied up separately and accurately labelled, if possible.

5. *Deformations* carefully observed and accurately described. Those of the heads of infants impressed in nursing, if any; those of the teeth produced by chipping, filing, etc.; those of the skin done by tattooing, incisions, scars, wheals, etc., correctly described.

6. *Crania* diligently collected. These should always be procured as perfect as possible, never leaving anything behind, particularly not lower jaws and teeth. On collection, they should be at once marked with tribal name, *in ink* if possible, to prevent confusion.

7. *Diseases*.—Careful observations upon their names, natures, peculiarities, etc., and their modes of treatment, if they can be ascertained.

8. *Careful Observations* of the habits and modes of life of the people; their social, intellectual, and moral state.

9. *Portraits*, by drawing or photography, should not on any account be omitted, if attainable.

10. *Articles* of dress, implements, etc., should be collected.

11. *Systems of Relationship*.—(See *Journal of Anthropological Institute* (vol. i, p. 1), paper by Sir J. Lubbock, President.)

12. *Language*.—As complete a vocabulary as circumstances will allow should be recorded.

II.—ENQUIRIES *as to* RELIGION, MYTHOLOGY, *and* SOCIOLOGY of
ESQUIMAUX TRIBES. By E. B. TYLOR, Esq., F.R.S.

1. What ideas have they as to souls and other spirits? What do they think of dreams and visions? are they appearances of spirits? Are trances, etc., set down to exit of soul? Are hysterics, convulsions, etc., ascribed to demoniacal possession?

2. Does the soul continue to exist after death? is there any difference made in the fate of souls? and, if so, is the difference due to their conduct in life? Is there any transmigration of souls?

3. Are there spirits in rocks, springs, mountains, etc.? if so, what are their appearance, functions, and names?

4. Are there any great gods believed in (*e.g.*, a sun god), etc.? Especially is there one called Torngarsuk, or Great Spirit? and, if so, did they hear of him from the Kablunat (white men) or know him before?

5. What prayers, sacrifices, fasts, ceremonial dances, religious festivals, etc., have they?

6. What sorcerers or seers have they? how brought up, and practising what crafts? What necromancy, divinations, and other magic arts have they?

7. What legends of gods and heroes have they? What stories which seem to relate to personified natural phenomena, sun, moon, etc.?

8. What actions and dispositions are considered good and bad, virtuous and vicious? Does public opinion make much difference in treatment of virtuous and vicious? Are there any set laws and penalties? what restraint is there on theft, murder, adultery, etc.? Do acts count as criminal differently when done on a member of the tribe or foreigners? What is the native law or custom as to vengeance? What are the laws or customs as to marriage, inheritance, and clanship?

9. What recognition of chiefship and what form of civil government can be traced? Are the old men rulers, and do the strong men displace them? What is the treatment of women and children, and of the sick and aged?

10. How far do the accounts of Egede, Cranz, Rae, Hall, etc., apply still? What traces are there of the old state of things before contact with whites?

11. Is it possible to trace any influence in custom, belief, etc., as derived from the very early intercourse with the Northmen? What traditions of the old Northmen, like those published in Danish by Rink?

12. What difference in the language of different districts? N.B.—Mere short vocabularies are of no sufficient bearing; the etymology and grammatical structure should be gone into, and long pieces, such as native legends, taken down, and construed thoroughly.

13. Are there ancient tunes sung? The melody should be carefully noted, and it is desirable to go thoroughly into such metre as is observable.

III.—QUESTIONS relating to the MAMMALIA, the VEGETATION, and the REMAINS of ANCIENT RACES. By W. BOYD DAWKINS, M.A., F.R.S.

Where do the Esquimaux obtain the ivory which they use for handles to their scrapers and for other purposes? Besides the walrus ivory they use the tusks of the mammoth: how do they know where to seek for these, and have they any legends in connection with them? The conditions under which these tusks occur in the regions bordering on the great Arctic Sea are of the highest importance as throwing light on similar remains in Northern and Central Europe. The bones and teeth of the smaller animals, which most probably occur in the same strata as the mammoth ivory, should be preserved, for there is reason to believe that at a time comparatively recent, zoologically speaking, the climate of the extreme north was far less severe than now.

The sources from which the Esquimaux obtained their wood should be carefully ascertained. Is it drift-wood brought down by great rivers, like the Obi or the Mackenzie, from more southern latitudes? or is it derived from ancient forests which once flourished where at the present time no trees will grow?

Have the Esquimaux any legends relating to other lands than those in which they now live; in other words, what was their golden age?

Have the Esquimaux any legends relating to the musk sheep, *Ovibos moschatus*?

IV.—ENQUIRIES into CUSTOMS RELATING to WAR. By Col. LANE FOX.

1. *Tactics*.—Have the tribes any disposition or order of battle? are the young or the weak placed in front? are they courageous? have they any war cries, war songs, or war dances, and if so give a detailed account of them? Do they employ noise as a means of encouragement, or do they preserve silence in conflict? Do they stand and abuse each other before fighting, or boast of their warlike achievements? Do they rely on the use of missile-weapons or hand-weapons? have they any special disposition for these in battle? have they any knowledge of the advantages of ground or position in battle, as suggested by Capt. Beechey? have they any sham fights with blunt and pointless weapons, such as are described by Vancouver in Owwhyhee and amongst the Hottentots? How is the march of a party conducted? do they move in a body with a broad front or in file, and do they send forward advanced parties? do they make night attacks? have they any stratagems for concealing their trail from the enemy? Have they any superstitious customs or omens in connection with war, and if so give an account of them? What is the meaning of the custom of shooting an arrow with a tuft of feathers attached, mentioned by Capt. Beechey, and supposed to be a declaration of war? (the custom of shooting an arrow towards an enemy as a declaration of war formerly existed in Persia.) Do they employ treachery, concealment, or ambush, and if so, what is their usual mode of proceeding?

Are their dogs employed in war? Are their treaties with other tribes binding? Do they form alliances with other tribes, and if so, to what extent do they act in concert, and under what leadership? Are personal conflicts common between men of the same tribe, and if so, what is their usual mode of proceeding?

2. *Weapons.*—What are their war weapons? are the same weapons used in war and the chase? What is the exact nature of their defensive armour, especially that described as being made of pieces of wood fastened together? Is the throwing stick used in war? what is the accuracy, range, and penetration of a lance projected by this means? is there any evidence of its being a more ancient weapon than the bow? is it an indigenous weapon or derived from without? What are the difficulties in the construction of the bow from the absence of suitable elastic wood? is the practice of giving elasticity to the bow by means of sinews attached to it an independent invention or derived from the Asiatic Continent? what is the accuracy, range, and penetration of the bow? In what manner are the performances of their weapons handed down from father to son, as is said to be the case? What is the exact meaning of the marks scored on their arrows and their weapons (with drawings of them)? Have they any means of giving a rotation to their arrows or other missile-weapons? Have they any regular system of training to the use of the bow and other weapons? At what age do the children commence the use of the bow? Are the Esquimaux expert in throwing stones with the hand, and if so, how far can they throw with accuracy and force, and for what purpose do they throw stones? Is the bow drawn to the shoulder or the chest? is it held horizontally or vertically? Are the women trained to the use of weapons? What are the varieties of the weapons employed in different tribes and what is the cause of variation? to what extent do the weapons vary in form in each tribe? Have they anything resembling a standard, or state halbard, or fetish for war purposes, as suggested by Capt. Beechey? (Careful drawings and collections of all the varieties of weapons are very necessary.) To what extent have the natives abandoned their ancient arms, and taken to those of civilised nations introduced among them? Do they readily adopt European weapons?

3. *Leaders and Discipline.*—How are their leaders appointed? are they identical with the chiefs and Angekos? have they any marks or distinctions of dress (with drawings)? are they the strongest and most courageous? have they any rewards for warlike achievements? have they any subordinate leaders, and how are they appointed? have the chiefs any aids or runners to carry messages?

* It appears desirable that some test of accuracy should be established. If the natives can be induced to shoot at a target, the distance of each shot from the point aimed at should be measured, added, and divided by the number of shots. The figure of merit obtained by this means would enable a comparison to be made with the shooting of other races. A target composed of grass bands, not less than six feet in diameter, might be used. Misses should be scored with a deviation of four feet; distances, fifty, one hundred, one hundred and fifty, and two hundred paces of thirty inches.

What kind of discipline is preserved? Have they any punishments for offences in war? what is the function of the women in war? are any of the adult males reserved from war for employment in other duties that are necessary for the tribe, and if so, how is that arranged?

4. *Fortifications and Outposts*.—Have they any intrenchments, earth, or snow works or defensive pits, as described by Capt. Beechey, and if so, give plans and sections of them drawn to scale? Do they employ pitfalls in war or the chase, and if so, give plans and sections? Have they any knowledge of forming inundations for defensive purposes? Have they any use of stakes for defence, or stockades, or abatis? Do they employ caltraps (small spikes of wood fixed into the ground to wound the feet)? Do they ever build on raised piles for defence, as is practised in some parts of the N.W. Coast? Do they occupy isolated positions, or hills, or promontories for the defence of their villages? Do they fortify their villages or have they other strong places to resort to in case of attack which are not usually inhabited? Have they scouts and outposts, and are they arranged on any kind of regular system? Have they any special signals for war? do they employ special men on these duties?

5. *Supply*.—How do they supply themselves during war? does each man provide for himself or is there any general arrangement, and under what management? Are their proceedings much hampered by the difficulty of supply? How do they carry their food, water, and baggage?

6. *Causes and Effects of War*.—What are the chief causes of war? Do feuds last long between tribes? How do they treat their prisoners? have they any special customs with regard to the first prisoner that falls into their hands? Do conquered tribes amalgamate? How are the women of the conquered tribes dealt with? How do they divide the spoil? Are their attacks always succeeded by retreat or do they follow up a victory? Is it likely that a knowledge of the arts, culture, etc., of other tribes has been spread by means of war? To what extent has the increase of the population been checked by wars? Has migration been promoted to any great extent by warlike expeditions?

ENQUIRIES RELATING to CERTAIN ARROW MARKS and other SIGNS in
USE AMONGST the ESQUIMAUX. By COL. A. LANE FOX.

1. Capt. Hall speaks of mysterious signs consisting of "particolored patches sewn on to seal skins, and hung up near the dwelling of the Angeko for the information of *strange* Innuït travellers, and to direct them what to do". Are these signs for *strange Innuït travellers* generally understood by the Esquimaux race? what is their object and significance? are they generally understood by the people or only by the Angekos? Drawings and explanations of these signs would be desirable.

2. Sir Edward Belcher, in the "Transactions of the Ethnological Society", vol. i, p. 135, new series, gives his opinion that the Esquimaux "are not without the means of recording events", and that "the

use of notched sticks and working of the fingers has a deeper signification than mere numerals." What is the exact meaning of these marks? are they confined to particular tribes or common to the whole race? Drawings and collections of these notches would be desirable.

3. In our Ethnographical Museums identical marks upon horn-pointed arrows appear to be derived from different localities and at different times, so as to preclude the possibility of their having belonged to the same owner. Some of these marks appear to be pictographic, although consisting of straight lines representing a man or an animal; others are evidently not pictographic, and consist of a longitudinal line with other short lines branching from it, or an edge of the horn-point serves the purpose of the longitudinal lines, and the short lines are marked upon it. Their resemblance to Runes has been noticed. What is the exact meaning of each of these marks? are they the marks of the owner or do they record the performances of the weapon, or have they any other significance? are there similar marks upon other weapons and utensils or upon rocks? are they understood beyond the tribe? is there any probability of their having been derived from the Scandinavian Settlers in Greenland? Drawings and collections of these, and any other similar marks, with the exact meaning of each mark, would be desirable.

ENQUIRIES RELATING TO DRAWING, CARVING, and ORNAMENTATION.
By COL. A. LANE FOX.

Have the natives a natural aptitude for drawing? do they draw living animals in preference to other forms? are the heads of men and animals usually represented larger in proportion than the other parts of the body? Have they the least knowledge of perspective? Are the most distant objects drawn smaller than those nearer? are the more important personages or objects drawn larger than the others? Do their drawings represent imaginary animals or animals now extinct? Do they show any tendency to represent irregular objects, such as branching trees symmetrically so as to produce a conventional pattern? Are the drawings generally historical, or merely drawn for amusement or for ornament? Are events of different periods depicted in the same drawing? Have they any conventional modes of representing certain objects? Do they draw from nature or copy each other's drawings? Do they in copying from one another vary the forms through negligence, inability, or to save trouble, so as to lose sight of the original object and produce conventional forms, the nature of which is otherwise inexplicable? if so, it would be of great interest to obtain several series of such drawings, shewing the gradual departure from the originals. Do they readily understand and appreciate European drawings? do they show any aptitude in copying European drawings? Do they draw with coloured earths besides the drawings engraved on bone? With what tools are these engravings made? Have they special artists who draw for the whole tribe or does each man ornament his own property? Do any of the natives show special talent for drawing, if so, in what direction

does such talent shew itself? Is drawing more practised in some tribes than others, and if so, does this arise from inclination or from traditional custom? Do they draw plans or maps? Do they understand European maps? At what age do the children commence drawing? are they encouraged to draw at an early age (a series of drawings of natives of different ages, from five or six upwards, would be interesting as a means of comparison with the development of artistic skill in Europeans)? Do they ornament with geometrical patterns, such as zigzags, concentric circles, contiguous circles, coils, spirals, punch marks, lozenge patterns, herring bone patterns, etc.? Do they use the continuous looped coil pattern in ornamentation? Are such geometrical patterns in any case copies of mechanical contrivances, such as the binding of an arrow-head, the strings supporting a vessel, etc., represented by incised lines? Are there any ancient drawings upon rocks, etc.? and, if so, in what respects do they differ from those of the existing natives? Copies to scale of any drawings which cannot be brought away would be very desirable.

V.—FURTHER ENQUIRIES *and* OBSERVATIONS *on* ETHNOLOGICAL QUESTIONS *connected with* ARCTIC EXPLORATION. By A. W. FRANKS, F.S.A., Keeper of Ethnography, etc., British Museum.

ON reading over the enquiries suggested by the distinguished members of the Anthropological Institute, Dr. Barnard Davis, Mr. Tylor, Mr. Boyd Dawkins, and Col. Lane Fox, the following additional points of enquiry have suggested themselves.

Anthropological Details.—Some uniform mode of measurement should be adopted, and careful instructions would no doubt be furnished by Dr. Barnard Davis. It would also be desirable to ascertain the strength of the natives in lifting and throwing weights, and pulling against weights, as compared with Europeans; also their speed in running.

Mental Qualities.—Evidences of quick understanding or the reverse. Habits of providence or the reverse. Knowledge of numeration and weights. Capability of understanding European pictures of animals, and especially of landscapes. Comprehension of the advantages of writing. Any knowledge of astronomy?

Marriage and Funeral Customs.—Is any ceremony observed with either sex on attaining puberty? Are wives obtained by courtship, capture, or purchase? if by the former, are there any surviving symbols of either of the two latter modes, as in Russia? At what age are marriages usually entered into? and are there any prohibited degrees of relationship? Are there any ceremonies at marriage or on childbirth? Is the name of the child ancestral? has it any special meaning? and is it changed at any time? How are the dead buried? are their weapons and food deposited with them? and if so, are they broken or rendered useless before being deposited? Is there any ceremony on receiving friends or strangers?

Arts and Manufactures.—Any particulars on these points will be

of special value, as possibly illustrating prehistoric periods. How is the carving in ivory or bone executed? is any method employed to soften the material? Have the ornamental designs on the implements any particular meaning? How are the skins tanned? are there any varieties in the fashions of dresses? and are these tribal or dependent on individual fancy? How is the sinew thread made? Are labrets in use? and is tattooing employed by either sex? Is there any native explanation of either custom? It would be desirable to obtain the native names of the various tools, and to be especially attentive to the use of stone implements. Is meteoric iron employed for implements? and where is it obtained? The native names of metals employed? Are there special persons who manufacture a distinct class of objects or does each family supply its own wants? Is tobacco in use? where is it obtained? and is any other substance used with it or substituted for it? How are the tobacco pipes made? and especially how are the bowls and stems bored?

Hunting and Fishing, etc.—The use of lures and stratagems. Are any tallies employed to record the number of animals killed? Is there any distinction in the form of paddles used by different sexes? do the rowers keep time?

Food.—Are any ceremonies used at their meals or feasts? Is there any offering to the deceased or to spirits? Is there any particular order in the succession of various kinds of food at such meals? Mode of feeding? especially as to the cutting off at the mouth the food. Do the teeth become much worn down by the nature of the food or the mode of eating?

Collections.—It is most desirable to make as complete a collection as possible of everything illustrating the Arctic tribes; for the intercourse with Europeans must in time modify or extinguish many of their peculiar implements, weapons, or dress, and it is believed that the Arctic races would furnish valuable illustrations of the condition of the ancient inhabitants of the South of France, etc., during the cave period. It would be well also to search in the walls and floors of ruined houses for stone and bone implements left by the former inhabitants. The specimens should be, as soon as possible, carefully labelled and marked; where marked by adhesive labels or by cards tied on, something should be written on the specimen itself, in ink or pencil, so that if the label should drop off or become detached there may be no doubt as to the specimen to which it belonged.

There is, however, a point of great importance which relates to the disposal of the collections when they are brought back. It has been too much the habit to consider such objects the property of the officers of the expedition, to be disposed of according to their wish. Should, however, such collections be made by a scientific expedition, there should be clear directions that it should be placed at the disposal of the government to be deposited in the national museum, and the commander of the expedition should see that the main collection contains the best illustrations of the subject.

To shew the evil effects of the contrary practice, it may be noticed

that the greatest of English explorers, Captain Cook, must have made very large collections, as specimens obtained by him are to be found in many museums and private collections both in England and abroad. Unfortunately, the value of his specimens is much diminished by the absence of any proper account of the places from which they were derived; and it is somewhat curious that although the British Museum is supposed to have the principal part of his collections, many of the finest specimens are not to be found there, but in other collections.

An instance connected with Arctic exploration may be noticed. In the well-known expedition in the *Blossom*, under Capt. Beechey, 1825-28, a number of specimens was obtained. Some of the specimens were given by Capt. Beechey to the Ashmolean Museum; others were presented by the officers to Mr. Barrow, and are now in the British Museum. Sir Edward Belcher gave some of his specimens to the United Service Institution, which on the sale of a part of that museum were dispersed; unfortunately, they were not properly labelled, and their value is much impaired. The bulk of Sir Edward Belcher's collection has since been sold, and though by a fortunate accident some of the most interesting specimens have been secured for the Christy Collection, the value of the series as a whole is taken away. Others seem to have been given by Surgeon Collie to the Haslar Hospital, and on the breaking up of a portion of that museum were sent to the British Museum; scarcely any of them were labelled, and it is only by accident that the probable origin of them has been traced. If a careful selection had been made at the time for the national collection, the manners, customs, and arts of the western Esquimaux would have received a full illustration.

VI.—QUESTIONS *relating to the* PHYSICAL CHARACTERISTICS *of the* ESQUIMAUX, etc. By JOHN BEDDOE, M.D.

A. The following measurements should be obtained from as many adults of the two sexes as possible.

1. Stature: best gotten by means of a graduated rod, in erect posture. Mention whether shoes are worn, and of what thickness.
 2. Greatest length of head, from the eminence between the eyebrows; with index or other callipers.
 3. Greatest breadth of head, wherever found, with callipers.
 4. Greatest breadth of zygomata, also with callipers.
 5. Span—*i.e.*, distance between tips of middle fingers, arms being expanded.
 6. Circumference of chest at nipple (in men).
 7. Ditto after full expansion by forced inspiration (in men).
 8. Circumference of thigh at fork.
 9. Distance from fork to ground.
- 1, 6, and 9, are most important.

B. The colours of *hair*, *eyes*, and *skin*, may be best expressed by means of Broca's scale; but in its absence the

1. *Eyes* may be designated as light (blue, light grey, light green), neutral (dark grey, dark green, yellowish gray), or dark (hazel, brown).

2. *Hair* as red, fair, brown, dark brown, rusty black, or coal-black.

3. It should be noted whether there is any beard, and, if so, of what colour, or whether it is extirpated.

4. Is grey hair observed?

5. Or baldness?

6. Or the *arcus senilis*?

7. Is the hair lighter in children than in adults?

8. Is the body less hairy than in Europeans?

C.1. What is the temperature of the body, taken with a "clinical thermometer" kept in the axilla fully five minutes? This should be observed in four or five persons.

2. Does the hand appear to be notably smaller than in Europeans?

For use in the observations above, a graduated rod, six feet long, with a sliding cross-piece, index callipers, graduated tapes, and a clinical thermometer, will be desirable.

VII.—FURTHER ETHNOLOGICAL ENQUIRIES, *more especially connected with the WESTERN ESQUIMAUX.* By WILLIAM TURNER, Professor of Anatomy, University of Edinburgh.

1. Should the expedition visit the western part of the north coast of America, it would be very desirable to ascertain if any traditions linger amongst the Esquimaux tribes of a migration of their ancestors across Behring's Straits.

2. It would also be desirable to ascertain if any communication takes place between the Esquimaux and the most northerly tribes of North American Indians, either for purposes of trade or war; or if the Esquimaux or Indian tribes intermarry.

3. Collections of crania of the tribes occupying the land on the eastern and western sides of Behring's Straits would be of great value. Careful notes should also be taken of the physical characteristics of the people, of their habits and modes of life, their tools, weapons, etc.

4. A collection of crania from the district around Kotzebue Sound would be also prized, as there is reason to think, from a few specimens already in this country, that the cranial configuration of the people of this region differs from that of the tribes on the eastern side of the American continent.

VIII.—INSTRUCTIONS SUGGESTED BY CAPT. BEDFORD PIM, R.N.

1. Make full inquiries as to the shape, length, breadth, depth, and capacity of the baidars; the covering, the lashing, size of the ribs and timbers, and the dimensions of the paddles.

2. How many persons can the baidar carry? with how much weight inside will they float when swamped?

3. What amount of provisions for its occupants can the baidar carry? what is the nature of those provisions, and how many days will they last?

4. What is the utmost speed of a baidar under paddles, paddles and sail (if any), or sail (if any) alone?

5. How many miles can be paddled in four hours? ditto eight hours? ditto twelve hours, with the view to arrive at the length of a day's journey?

6. These questions to apply equally to the kyack.

7. Especially make inquiries with reference to the capability of the baidar, or of two kyacks lashed together, to cross from Labrador to Greenland; and their ability to encounter heavy weather.

8. Also if women can paddle the kyack as well as the men.

9. Make particular inquiries about the weapons of the chase used both on land and water.

The PRESIDENT having stated that next session the meetings of the Institute would be held on Tuesdays instead of Mondays, adjourned the present meeting till November.

ANTHROPOLOGICAL MISCELLANEA.

ON MANKIND, THEIR ORIGIN AND DESTINY. By an M.A. of Balliol College, Oxford. London: Longmans, Green, and Co., 1872.

It is somewhat difficult to know what to say in reference to this well got up work. Not that it is wanting in matter: it contains nearly eight hundred pages, the contents of which begin with an account of Egypt and the Hebrews, and end with a discussion of nature-worship. The work may be divided into three portions. The first gives an explanation of the Mosaic cosmogony and of the allegory of Adam and Eve; the second critically examines the Christian Gospels; and the last (which occupies half the whole) treats of nature-worship. We have in the third part a large number of facts and ideas brought together, but little originality is displayed in their treatment, and no new light is thrown on the interesting subject to which they relate. The explanation of the allegory of the Fall would have been the most important portion of the work if it had been more satisfactory. The author certainly has not yet revealed the hidden meaning of the Fall. The engravings with which the work is supplied are the most valuable part of it.

ÉTUDE SUR LES RACES INDIGÈNES DE L'AUSTRALIE. Par le Docteur Paul Topinard, Conservateur de la Société d'Anthropologie. Paris: G. Masson, Éditeur, 1872.

THIS elaborate memoir will be read with great pleasure by all who take an interest in the aborigines of Australia. These furnish a subject on which Dr. Topinard is well qualified to speak, and, while not agreeing with all his conclusions, we congratulate him on the result. The most important of these concern the typical differences presented by a comparison of the aborigines among themselves, and those which relate to their connection with other races. As to the former, Dr. Topinard says that the Australian tribes may, speaking generally, be divided into three classes: the first, and lowest, spread chiefly along the coasts and in the islands of the north, the north-west, and the west—who are more or less malformed and negroid; the second, found everywhere, but chiefly in the interior—who are a superior race having long and straight hair; the third division comprises the tribes which have been produced by the crossing of the inferior and superior races, and which exhibit all the degrees intermediate between them. Dr. Topinard thus resumes the characters of the two original ethnological elements of the Australian area: “La

première est dolichocéphale, de haute taille, robuste et bien proportionnée de corps ; elle a les cheveux longs, droits et lisses, les traits vigoureusement dessinés et la peau couleur chocolat ou cuivre-foncé. D'une intelligence proportionnée à des besoins restreints et appropriés au milieu où elle se meut, ses générations actuelles se refusent à accepter la vie sociale comme la comprennent les Aryens..... La seconde est plus dolichocéphale encore, de petite taille, mal faite au corps ; elle a le teint noir foncé, les cheveux frisés ou crépus, le crâne petit et rond, les mâchoires très prognathes, le sclérotique punâtre, les pieds plats, pas de mollet, etc..... D'une intelligence moindre que la précédente, elle semble presque incapable de subvenir à ses besoins ;" and it accepts only the vices of the Europeans before whom it quickly disappears.

That these two distinct elements are traceable cannot well be questioned. Dr. Topinard thinks, however, that the pure type of the lower race is now extinct, although its characters are preserved by many of the females among the superior tribes, who have taken their wives by violence from their inferior neighbours. This, he says, explains why travellers frequently notice very deformed women with very fine men, other women being of large and fine proportions. Is it not possible, however, that the former, or rather the inferior tribes from which they are said to be taken and which are supposed to be the result of the crossing between the higher and lower types, may show simply a deterioration arising from the unfavourable natural conditions to which they are subjected ? This would still admit the existence of a radical difference between the frizzly haired and the straight haired divisions.

As to the external affinities of the Australian aborigines, Dr. Topinard accepts the opinion of Sir George Grey and others, that the continent has been occupied by tribes spreading from the north-western corner, but he adds that the inferior race had already pre-occupied the whole continental area. This race, our author thinks, may be identified with the Papou of New Guinea ; and he supposes that all the southern and eastern portions of Melanesia were inhabited by the same negro race before the yellow race of Polynesia and New Caledonia (to which he would refer the superior Australian type) made their advent. The latter is supposed to have had an Euro-Asiatic origin. How far these views are correct, it is almost impossible to say. The facts are, however, quite consistent with the straight-haired race representing the original Australian stock. The Australian native has sometimes been called a straight-haired negro, and it is remarkable that this type is almost, if not quite, absent from the African continent, which we may suppose to have been the original home of the frizzly haired dolichocephalic race, or at least its most important centre. On the other hand, the Pacific area would seem to be the home of the straight-haired dolichocephalic type among the primitive peoples of the old world. Australia probably belongs to this area, although it would seem to be within the limits of the overlapping which, in accordance with the above view, must

have taken place when the two primitive dolichocephalic stocks came into contact in the course of migrations from their original centres. Whether the Australian continent was the home of a primeval straight haired race is yet to be determined, but it is at least noticeable that Lesson considered the frizzly haired peoples to be the intruders in the Indian Archipelago.

C. S. W.

THE HAMATH INSCRIPTIONS.

DR. CARTER BLAKE must have forgotten that, on the very night Captain Burton exhibited the inscriptions at the Institute, I pointed out the phallic character of o|o. I also attributed a like character to Ø and other characters, but of that I am now not so assured.

The whole question of the Hamath inscriptions has now made a large advance on account of the researches of the Rev. Dunbar Heath, who has arranged three parallel portions in the inscriptions, leaving the question of inscription or no inscription now beyond controversy, and, in fact, gaining over to the side of these being inscriptions their leading opponents.

What I did was to prove in detail what he has proved in mass, and I was engaged on a dictionary of the inscriptions to carry out the comparison of the parallel passages I had detected. Mr. Heath, however, in doing this has shown something I never suspected, although my attention was turned to the very matter—namely, the inversion of some of the groups—which, according to him, may be read from right to left or from left to right. From this important results may follow.

At present I am not prepared to go with Mr. Heath in his view that the inscriptions are to be classed as hieroglyphics allied to Egyptian, and that he has determined the names of Egyptian kings. It appears to me quite open for consideration whether these inscriptions are not very much older than the Egyptian hieroglyphic epoch.

One stumbling-block at present in Mr. Heath's way is o|o. This I still believe to be phallic. Although he entertains a different idea, it is not easy to see how he can get over its plain character in the rubbings, though what may result from the ultimate determination of these important inscriptions no one can forecast.

Contrary to the opinions of many eminent scholars conversant with Egyptian and cuneiform (including Mr. Oppert), I believe the inscriptions to be more nearly related to cuneiform than to hieroglyphic. In consequence, o|o appears to me to be assimilated to the cuneiform *, and to be a determinative, perhaps for god and king.

If so, it affords an origin for the Hebrew ⚡, and a Cypriote character of allied form. Under my examination, the square Hebrew presents many points of divergence from the Phœnician class, and appears to be derived from a very ancient archetype—I believe, one common to the cuneiform and to the cabalistic alphabet of the Rabbins, which is still used for secret writing, derived from the intersection of || and ==.

To this would be traced כּוּנְסַתְהַכּוּ. כּ has been forcedly traced from פּ א < of the Phœnician class, but it has a great resemblance to o/o, or rather its Cypriote form. The determinative for Deity would naturally be prefixed to a divine alphabet, and that in the Assyrian or square alphabet being prefixed and coming first, it might have replaced the first letter.

In nature-worship of the earlier period, the triad of Sun and Moon, Phallus and Yona, Tree and Serpent, was correlative. Thus, the Sun (*) was the equivalent of o/o, as the full and crescent moon of U and O. It is by no means clear these are not found in Hamath as well as the lingam Θ.

If *, o/o, or כּ was the first character, O must at one epoch and under one system have been the final character, and alpha and omega constitute a real symbol of an earlier nature-worship. If o/o or כּ and O correspond, it is possible that | corresponds to (, used in Phœnician as an O, and perhaps represented in other alphabets by the omicron. Thau in Hebrew is also a last character, but its form in Greek, etc., Θ, partakes of a lingam type.

If the alphabetic characters had their origin previous to the time of the Phœnician, then the vowels and aspirates might have names from nature-worship. In comparative philology there is suggestive material for regarding I as middle, A as male, and O and U as female. In cuneiform, syllables of this latter vowel sometimes bear the <, which appears to be the equivalent of the female symbol C.

HYDE CLARKE.

RECHERCHES SUR L'ETHNOLOGIE DE LA BELGIQUE. Par Léon Vanderkindere. 8vo. Bruxelles: 1872.

SINCE the publication of the memoirs by Dr. Charnock, Dr. Beddoe, and myself, on the Wallons, M. Léon Vanderkindere has published a treatise on the comparative anthropology of Belgium, which is a fitting companion volume to Lubach's work on Holland. "Belgium has no real unity; it is the country of contrasts"; and the author inquires whether it is to Germany or to Gaul that its race-characters are most nearly allied. To do this, it is necessary to ask what was the population of Belgium in the time of Cæsar, which has been alleged by many eminent anthropologists to be Germanic. Schayes, Raepsaet, Britz, Gérard, and Grandgagnage, have advocated this opinion, and have laid stress on certain passages in Cæsar and Tacitus, which lead to the opinion that the Tungri, the Nervii, the Menapii, and perhaps the Morini, appertained to the Germanic race. Raepsaet carried this theory so far as to identify the Belgian and Tartar races. Moke has even extended this argument, which it is the object of M. Vanderkindere to demolish. He points out the existence of true Celts at Noviomagus (Nimeguen) and at Lugdunum (Leyden), and cites all names ending in *acum* {e.g., Ledernacum (Lierneux), Cortoriacum (Courtray), and Montenacum (Montenaken)] as examples; while the

names of men as Cativulcus, Cingetorix, Ambiorix, and of peoples, as Treviri, Nervii, Ambivarites, have no Germanic character. St. Jerome (comm. in epistol. ad Galat. ii, prol. c. 3) has stated that the Treviri spoke nearly the same language as the Celtic Galatæ of Asia Minor, and that Cæsar disguised himself as a Gaul, not as a German, to visit the camp of the Eburones (Suetonius, 18). If the Adriatici were really the descendants of the Cimbri, the Cimbri themselves have been stated to be true Celts, by H. Müller, Prichard, Friker, Grupp, Laveaux, Fréret, Thierry, Petigny, and Schayes, contrary to the philological opinions of Adelung. Whilst Strabo considers the Sicambri and the Nervii to have been Germans, he formally refuses the epithet to the Menapii.

His description of the races of Belgium, as they are found at the present day, is much too elaborate for translation, or even abstract. The distinctions which he draws between the existing Flamands (*e.g.*, of Bruges) and the ancient Menapii appear well founded. The most interesting part of his argument, however, is, that which alleges the presence of a prehistoric (allophylian) population in modern Belgium. This is found at various spots in the valley of the Meuse, in the neighbourhood of Bouvignes and in Hainault, not far from Mons. They are found here to contrast strongly with the Wallons. In the Flemish district, and even in the lower part of Brussels, near to the Seine, this type appears. It is a pity that M. Vanderkindere does not give us photographs which would show if this race really presents any Lappish, Finnic, or Ligurian affinities. I may say that I have never seen it myself, but I am far from thinking the fact unlikely.

The author appears to differ from the opinions of Dr. Beddoe and myself, and to make the Wallons to be a lighter complexioned race than is commonly supposed. But this divergence of opinion does not, in the least, detract from the admiration with which we must regard one of the most instructive and lucid memoirs on the Belgian people that has hitherto been published.

C. CARTER BLAKE.

NOTE ON A MUMMIED AUSTRALIAN HEAD OF A CHILD, PRESENTED BY MR. BRADLEY (see p. 137, vol. ii). By C. CARTER BLAKE, DOCT. SCI., Lecturer on Comparative Anatomy, Westminster Hospital.

THE present mummied specimen has been enveloped since death in a covering of European calico, which has probably adhered to the scalp by the application of some gum. The back part of the scalp is covered with a *livrée* of small fine silky dark brown hair, which exhibits no tendency to become curled or "woolly". The aspect of the skull is decidedly prognathous; it has been rendered more so by the addition of a stout cord, now severed, across the mouth inside, and a string (of European manufacture) through the nose. But the convergent lines of the maxillary and mandibular alveoli, and the recession of the chin, give to the jaws, without the aid of mechanical contrivances, an aspect which is peculiarly simious. The ears are large and patulous, and while the tragus is very large, the angulus Wool-

neri is not prominent. The greater fontanelle is open. The child has probably been about a year old ; and the present specimen is interesting as affording an example of the physical characters of the young Australian aborigine, only matched previously, I believe, by the beautiful series of photographs presented to us some years ago by Sir Charles Nicholson.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

NOVEMBER 5TH, 1872.

DR. R. S. CHARNOCK, *Vice-President, in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

The following new members were announced: JOSEPH BONOMI, Esq., Soane Museum; HENRY JAMES NELSON, Esq., M.A., Combalonum, Madras; CLAUDE LONG, Esq., M.A. Oxon., 13, Marine Parade, Brighton; JAMES FISCHER, Esq., F.L.S., Salem, Madras Presidency; W. L. DISTANT, Esq., 1, Caledonian Terrace, Queen's Road, Hatcham.

The following presents were announced, and the thanks of the meeting were voted to the respective donors:—

FOR THE LIBRARY.

From the AUTHOR.—Pre-historic Phases, by Hodder M. Westropp.

From the SOCIETY.—Bulletin de la Société d'Anthropologie de Paris, tome 6, Nos. 2 and 3, 1872.

From the AUTHOR.—Ancient Stone Implements of Great Britain, by John Evans, F.R.S.

From the AUTHOR.—Contribution à une Histoire Générale et Encyclopédique des Sciences, by Théodore Wechuiakof.

From the SOCIETY.—Proceedings of the Literary and Philosophical Society of Liverpool, 1870-1.

From the AUTHOR.—Etude sur les Races Indigènes de l'Australie, by Dr. Paul Topinard.

From the TRUSTEES.—Annual Report of the Trustees of the Museum of Comparative Zoology, at Harvard College, Cambridge, U.S., 1871.

From the EDITOR.—La Revue Scientifique, Nos. 1 to 15, 1872.

From the SOCIETY.—Proceedings of the Royal Society, vol. xx, Nos. 135, 136, and 137, 1872.

- From the EDITOR.—The Food Journal for July, August, September, October, and November.
- From the AUTHOR.—The Affinity between the Hebrew Language and the Celtic, by Dr. Thomas Stratton, R.N.
- From the SOCIETY.—Proceedings of the Royal Geographical Society, vol. xvi, Nos. 2 and 3. Journal, ditto, 1871.
- From the EDITOR.—The Mining Magazine and Review for July, 1872.
- From the SOCIETY.—The Journal of the Royal Historical and Archaeological Association of Ireland, No. 10, 1872.
- From the ACADEMY.—Bulletin de l'Académie Impériale des Sciences de St. Petersburg, t. xvii, Nos. 1, 2, and 3.
- From the SOCIETY.—Mémoires de la Société des Naturalistes de la Nouvelle Russie, vol. i, No. 3.
- From the INSTITUTE.—The Canadian Journal, vol. xiii, No. 4.
- From the LIBRARY.—Report of the London Library, 1871-2.
- From JAMES BURNS, Esq.—Human Nature for August, September, October, and November.
- From the AUTHOR.—The New Principia, Sec. edit., by Com. R. J. Morrison, R.N.
- From the EDITOR.—Nature (to date).
- From the SOCIETY.—Proceedings of Philosophical Society of Glasgow, 1871-2.
- From the INSTITUTE.—Smithsonian Report, 1870.
- From the SOCIETY.—Journal of the Asiatic Society of Bengal, part i, No. 3, 1871. Proceedings ditto, Nos. 2, 3, 4, and 5.
- From the SOCIETY.—Mémoires de la Société Royale des Antiquaires du Nord. 1869-70-71.
- From the INSTITUTION.—Journal of the Royal United Service Institution, vol. xv, No. 67.
- From the ASSOCIATION.—Journal of the East India Association, vol. vi, No. 1.
- From the EDITOR.—Journal of Psychological Medicine, July 1872.
- From the AUTHOR.—Man contemplated Physically, Morally, Intellectually, and Spiritually, part iii, by the late J. W. Jackson.
- From the AUTHOR.—Recherches sur l'Ethnologie de la Belgique, 1872, Leon Vanderkindère.
- From the ACADEMY.—Jahrbuch der K. K. Geologischen Reichsanstalt, 22 Band, Nos. 1 and 2; Verhandlungen ditto, Nos. 1 to 10, 1872.
- From the SOCIETY.—Journal of the Royal Asiatic Society of London, vol. vi, part 1.
- From the GOVERNMENT.—Statistics of New Zealand for 1870.
- From the SOCIETY.—Tijdschrift de la Société des Arts et des Sciences à Batavia, vol. xviii, Nos. 3 and 4; xx, No. 3; Notulen ditto, vol. ix, 1871, and catalogues.
- From the AUTHOR.—Nonnas Cranioscopicas, 1872, by Philip Phœbus.
- From the ACADEMY.—Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften in Wien. Philos-Histor. Classe—68 Band,

- Heft 2, 3, and 4; 69 Band, Heft 1-3. Math.-Naturw. 1871, 1 Abtheil, Heft 6-7, 8, 9-10; 11 Abtheil, 11, 6-7, 8, 9-10.
- From the AUTHOR.—Über den Bau der Zigeunerschädel, by Isidor Kopernicki.
- From Prof. ECKER.—Archiv für Anthropologie, Fünfter Band, 1872.
- From the SOCIETY.—Bulletin de la Société Impériale des Naturalistes de Moscow, No. 1, 1872.
- From the EDITOR.—Medizinische Jahrbücher der k. k. Gesellschaft der Ärzte in Wien, 1872, Nos. 2 and 3.
- From the SOCIETY.—Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire, 1871-2.
- From the SOCIETY.—Schriften der Königlischen Physikalisch-ökonomischen Gesellschaft zu Königsberg, vol. xii, Nos. 1 and 2, vol. xiii, No. 1, 1871-2.
- From the SOCIETY.—Mémoires Couronnés par la Société d'Ethnographie, vol. i, parts 1 and 3.
- From the GOVERNOR.—Report upon the Population of Barbados, 1851-71, by Governor Rawson, C.B.
- From the BOARD.—The Third Annual Report of the State Board of Health of Massachusetts, 1872.
- From the AUTHOR.—The Increase of Human Life, and Immigration into the United States, by Dr. E. Jarvis.
- From DR. EDWARD JARVIS.—Handbook for Immigrants to the United States, with map.
- From the Author.—Hints and Facts on the Origin, Condition, and Destiny of Man, Sec. Edit. by Rev. Pius Melia, D.D.
- From the AUTHOR.—The Expression of the Emotions in Man and Animals, by Charles Darwin, M.A.
- From the AUTHOR.—Oriental and Linguistic Studies, by Wm. Dwight Whitney.

FOR THE MUSEUM.

- From WALTER BESANT, ESQ., M.A.—Six Photographs of the Hamath Stones.

The following paper was read by the author :

MAN and the APE. By C. STANILAND WAKE, M.A.I.

THE primary object of the present paper is to ascertain whether the conclusion arrived at by Mr. Darwin and other writers as to the origin of man—that he has sprung from the ape by simple descent—can be depended on, and if not, what is the nature of man's relationship to the animal kingdom.

Without further preface, I shall proceed to consider as briefly as possible the main arguments adduced by Mr. Darwin in support of this conclusion.* Those which are derived from the consideration of physical data appear to me to be of compara-

* "The Descent of Man," vol. i, p, 10 seq.

tively small importance, since they may be admitted without seriously affecting the question at issue. They are almost all connected with the fact that man is "constructed on the same general type or model with other mammals." Thus it is with the brain, every chief fissure and fold of which is declared to be developed in the brain of the orang equally with that of man. Their constitutional habit, however, appears also to be the same. Thus man and monkeys are liable to many of the same non-contagious diseases; medicines produce the same effect on both; and most mammals exhibit the mysterious law of periodicity in various diseases. These are interesting facts, but the most important for the argument of the ape-descent of man, are those which show the existence in the human body of certain rudimentary organs and structures which are fully developed with some of the lower animals. It is possible, however, to explain this phenomenon without having recourse to the hypothesis of a simple ape-descent; even if it be admitted with M. Broca, that in the parallel between man and the anthropoids, the comparison of organs shows only some slight differences.* This may be granted even as to the brain, and that "the immense superiority of man's intelligence depends, not on the anatomical structure of his brain, but on its volume and power."† But then, if such be the case, it is all the more difficult to account for the vast difference which, says Broca, a comparison of function reveals, and which led M. Gratiolet to exclaim that, although man is indeed by his structure a monkey, yet by his intelligence he is a God.‡

While admitting that physiological considerations reveal a much wider interval between man and the anthropoid apes than anatomical data require, M. Broca would hardly allow that the former exhibits anything peculiar in his mental action. So also, Mr. Darwin says that man and the higher mammals "have some few instincts in common. All have the same senses, intuitions, and sensations—similar passions, affections, and emotions, even the more complex ones; they feel wonder and curiosity; they possess the same faculties of imitation, attention, memory, imagination, and reason, though in very different degrees."§ The faculty of articulate speech, moreover, is said not in itself to offer "any insuperable objection to the belief that man has been developed from some lower form;" while the taste for the "beautiful" is shown not to be peculiar to the human mind.|| The moral sense is supposed by Mr. Darwin to be the most distinctive characteristic of man; but

* "L'Ordre des Primates," p. 173. 1870.

† *Ibid.*, p. 168.

§ *Op. cit.*, i, 48.

‡ *Ibid.*, p. 173.

|| *Ibid.*, p. 63.

even this is asserted to have been developed out of the social instincts which man and many of the lower animals have in common.* Finally, self-consciousness, abstraction, etc., even if peculiar to man, are declared to be “the incidental results of other highly-advanced intellectual faculties”;† and these again are mainly due to the continued use of a highly developed language, which originated in “the imitation and modification, aided by signs and gestures, of various natural sounds, the voices of other animals, and man’s own instinctive cries.”‡

If, however, all this be true, how are we to account for the wonderful intellectual superiority of man? Haeckel gives an explanation which, although ingenious, is far from satisfactory. He says that it is owing to the fact that “man combines in himself several prominent peculiarities, which only occur separately among other animals.” The most important of these are the superior structure of the larynx, the degree of brain or soul development, and that of the extremities, the upright walk, and lastly speech. But, says Haeckel, “all these prerogatives belong singly to other animals: birds with highly organized larynx and tongue, such as the parrot, etc., can learn to utter articulate sounds as perfectly as man himself. The soul’s activity exists among many of the higher animals, particularly with the dog, the elephant, and the horse, in a higher degree of cultivation than with man when most degraded. The hand, as a mechanical instrument, is as highly developed among the anthropoid apes as with the lowest men. Finally, man shares his upright walk with the penguin and other animals, while capacity for locomotion is more fully and more perfectly developed among many animals than with man.” Haeckel concludes, therefore, that it is “solely the fortunate combination of a higher organization of several very important organs and functions, which raises most men, but not all, above the animals.”§ This explanation, however, appears rather to increase the difficulty than to remove it. Some of Haeckel’s statements might probably be challenged with success; but even admitting their truth, what cause can be given of the marvellous combination in man, of qualities possessed separately by animals, the highest in the class to which they belong?

Mr. Darwin justly remarks, that “the belief that there exists in man some close relation between the size of the brain and the development of the intellectual faculties, is supported by the comparison of the skulls of savage and civilized races of ancient and modern peoples, and by the analogy of the whole vertebrate

* *Ibid.*, p. 70 seq.

† *Ibid.*, p. 105.

‡ *Ibid.*, p. 56.

§ *Generelle Morphologie der Organismen*, vol. ii, p. 430. 1866.

series.”* There must, indeed, be a certain agreement between the brain and its intellectual products, and hence the large size of the human brain requires that the mental phenomena of man should be of a vastly superior nature to those presented by the lower animals. Whether, according to the developmental view of the correspondence between human and brute mental faculties, the lower races of man, as compared with animals, really exhibit an intellectual superiority commensurate with the largeness of their brains, may be questioned. Mr. Wallace, indeed, declares that they do not, and he goes so far as to say that “a brain slightly larger than that of the gorilla would, according to the evidence before us, fully have sufficed for the limited mental development of the savage.”† This opinion is correct, on the assumption that animal and human mental action is perfectly analogous, and Mr. Wallace would undoubtedly be right in asserting that the savage possesses a brain “quite disproportionate to his actual requirements,” if by this phrase is meant his mere animal wants. But the savage is a man, and the size of brain required by him must be judged of, not by the degree of intellectual action he exhibits, but by its accompaniments—not by quantity, but by quality.

The source of man's superiority must be sought in an examination of his mental faculties, and yet the inquiry is vitiated at the very commencement, by the assumption that the mind of man differs from that of the animal only in the degree of its activity. I am prepared to admit that the higher mammalia, at least, have the power of reasoning, with all the faculties which are essential to its exercise. But this very fact makes it utterly incomprehensible how the result of human mental activity can be so superior, unless some further principle or faculty than those which the animal mind possesses operates in that of man. What this principle or faculty is, may be shown by reference to certain facts connected with language. Mr. Darwin ascribes the origin of human speech to imitation and modification of natural sounds and man's own instinctive utterances.‡ That the primitive elements of man's language were thus obtained is doubtless true. Something else, however, is required to explain the phenomena presented by the languages of uncultured peoples. Such, for instance, cannot have been the origin of certain ideas which are apparently common to the minds of all peoples however savage. It has been said that these peoples, although having names for every particular object, have no words to express a class of objects. This statement must be received with caution. But if absolutely true in the sense intended, it

* *Op. cit.*, vol. 1, p. 145.

† “*Natural Selection*,” p. 343. 1870.

‡ *Op. cit.*, vol. i, p. 56.

cannot be denied that nearly all primitive languages have words denoting colours, and these by their very nature, as expressive of attributes, are applicable to a series of objects.

Now there is not the slightest reason to believe that animals have any idea of qualities, as such. Even the taste for the beautiful, which Mr. Darwin tells us is not unknown to various animals—especially birds, has relation to the object which attracts by its colour, etc., and not to the colour itself. But it is just this perception of the qualities of objects which is at the foundation, and forms the starting point, of all human progress. The essential instrument of intellectual development, articulate language, was first prompted by such a perception, and it was in the recognition of the qualities of actions, by reflection on their consequences, that the moral sense was gradually evolved. It can hardly be that a power which has had so wonderful an effect, and one which is so different from anything met with among the lower animals can be referred to any of the ordinary faculties which these possess. If not, we must ascribe it to a new faculty altogether, a kind of spiritual insight, which can be explained only as resulting from the addition of a principle of activity superior to that which is the seat of the animal life. If we were to trace the beginning of every single branch of human culture, it would be found to have originated in the exercise of such a faculty of reflection as that here described. The elements of knowledge man possesses in common with the animals around him; but these have not built up any superstructure, because they have no spiritual insight such as will enable them to analyse those elements, and thus to fit them for recombination into that wonderful series of forms which they have taken in the human mind.

It is hardly necessary to discuss here the nature of the principle which thus shows its energy in the mind of man. Whether it is the cause or the effect of the refined organisation exhibited by the human body need not now be considered. If the latter, however, it may be objected that—assuming the human bodily organism to have been derived by descent from a lower animal form, according to the principles of natural selection—the intellectual faculty peculiar to man must have had analogous origin. To this it might be answered that man's special faculty could not have been derived from an animal organism which does not itself possess it; but it is advisable rather to test that conclusion by a consideration of the physical data, and to see how far the argument for natural descent can be supported. According to this view, the tendency to the bipedal character was the first to become operative in the gradual development of man out of the ape. The erect form is supposed, however, to have been as-

sumed that the arms and hands might have full play,* and it is evident that the free use of these would not have been of any special advantage without an increased brain-activity to guide them. Probably the changes required in the physical structure would be concomitant, but if they had a starting point it would surely be in the brain rather than in the extremities.

The great development of the encephalon in man as compared with the monkey tribe would, in fact, require all the other supposed changes. Thus the greatly increased size and weight of the brain and its bony case, combined with the position of the foramen magnum at the base of the skull, would necessitate the erect position of the body, and this would supply the arms and upper part of the trunk with the required freedom of movement. These changes would be accompanied by the modification of the pelvis and lower limbs, while the increased sensitiveness of the skin, resulting from man's more refined nervous structure, will sufficiently account for its general nakedness,† without supposing, with Mr. Darwin, the influence of sexual selection.‡ It is therefore in reality only the large size of the human brain that has to be accounted for, and this is by no means easy on the principle of natural selection. No doubt, with the increased activity of the mental powers the brain would become more voluminous. But what was to determine that increased activity? It can only have been an improvement in the conditions of existence, to which man's supposed ape progenitors were subjected, for which no sufficient reason can be given. Moreover, those progenitors would be subjected to the inevitable struggle for existence—a struggle which, even with man in an uncivilised state, has a tendency to brutalise rather than to humanise. Under these conditions it would seem to be impossible for man to have raised himself to so great a superiority over his nearest allies as even the lowest savage exhibits. "His absolute erectness of posture, the completeness of his nudity, the harmonious perfection of his hands, the almost infinite capacities of his brain, constitute," says Mr. Wallace, "a series of correlated advances too great to be accounted for by the struggle for existence of an isolated group of apes in a limited area,"§ as Mr. Darwin's hypothesis supposes.

While firmly convinced, on the grounds already stated, that man cannot have been derived from the ape by descent with natural selection, I am by no means prepared to admit that he may not have been so derived under other conditions. Although man undoubtedly has a mental faculty of the utmost importance

* Darwin, *op. cit.*, vol. i, p. 141.

† See Owen's "Anatomy of the Vertebrates," vol. iii, p. 186.

‡ *Op. cit.*, vol. ii, p. 376.

§ The "Academy," No. 20, p. 183. 1871.

which the animals do not possess, agreeing with his superiority of physical structure, there can be no question that, both physically and mentally, he is most intimately allied to the members of the animal kingdom. Before endeavouring to furnish a solution of the difficult question of the origin of man under these conditions, I would point out, what is so ably insisted on by M. Broca,* that *transformism*, to use the continental term, is wholly distinct from "natural selection" or any other mode by which the transformation may be originated or effected. This is a most important consideration, and one which Mr. Darwin has incidentally referred to in his latest work.† That man is the final term in a process of evolution, the beginning of which we cannot yet trace, appears to me to be a firmly established truth. The descent of man from the ape under the influence of external conditions is, however, a totally different proposition, and one of which no actual proof has yet been furnished, the argument really amounting to this, that the correspondences between man and the higher mammals render it more likely that he has descended from the ape than that he has been specially created. This may be true, and yet those correspondences be owing to a very different cause from the one thus supposed for them.

Mr. Herbert Spencer affirms that "successive changes of conditions would produce divergent varieties or species" of the organisms subject to them, apart from the influence of "natural selection," which, in the absence of such successive changes of conditions, would effect "comparatively little."‡ It is to the latter especially Mr. Spencer traces the gradual evolution of nature, on the process of which he has thrown so much light. Thus, when treating elsewhere of that evolution, he says—"while we are not called on to suppose that there exists in organisms any primordial impulse which makes them continually unfold into more heterogeneous forms; we see that a liability to be unfolded arises from the actions and reactions between organisms and their fluctuating environments. And we see that the existence of such a cause of development pre-supposes the non-occurrence of development where this fluctuation of actions and reactions does not come into play."§ It is evident that this theory, like that of Mr. Darwin, supposes the occurrence of slight structural changes which, in the absence of knowledge as to their exciting causes, may be described as "spontaneous," and the perpetuation of which is the establishment of new forms or species. But among domestic animals,

* "Revue des Cours Scientifiques," 30th July, 1870, p. 558.

† *Op. cit.*, vol. i, p. 152.

‡ "First Principles," 2nd ed., p. 447, n.

§ "Principles of Biology," vol. i, p. 430.

and by analogy we may assume, therefore, among wild animals, variation in the way supposed is not the only mode by which the physical structure may be modified. Various instances of sudden change have been collected which are very difficult to deal with, and they have led Mr. Huxley to remark that Mr. Darwin's position "might have been even stronger than it is if he had not embarrassed himself with the aphorism '*natura non facit saltum*,' which turns up so often in his pages." Mr. Huxley adds "that nature does make jumps now and then, and a recognition of the fact is of no small importance in disposing of many minor objections to the doctrine of transmutation."* Minor objections may certainly be thus removed, but only by introducing one of much greater moment. If, as Mr. Spencer says, "natural selection is capable of *producing* fitness between organisms and their circumstances,"† it must be by the perpetuation of slight changes, and there does not, indeed, appear to be any room in the hypothesis of natural selection for the saltatory movements which it is so necessary to explain.

The changes which organisms undergo, whether sudden or gradual, and whatever their approximate exciting cause, take place in pursuance of the evolution of organic nature, and there can be no doubt that this proceeds under the guidance of law. Professor Owen expresses this fact in saying that "generations do not vary accidentally in any and every direction, but in pre-ordained, definite, and correlated courses."‡ This may be accepted as expressing a general truth, subject to some qualification of the word "preordained." It is not exactly true, however, for variations are not always regular and orderly. Within certain limits, indeed, they would seem to take place in any direction, but there is always a tendency for them to accumulate in that course along which they meet with the least resistance. This is in accordance with the principle laid down by Mr. Herbert Spencer, that everything tends towards equilibration, the state being one not of absolute but of moving equilibrium, while "throughout evolution of all kinds there is a continual approximation, and more or less complete maintenance of this moving equilibrium."§ The ultimate result is that, "when through a change of habit or circumstance an organism is permanently subject to some new influence, or different amount of an old influence, there arises, after more or less disturbance of the old rhythms, a balancing of them around the new average conditions produced by this additional influence."|| It is evident that the variations which have been originated before the attain-

* "Lay Sermons," p. 326.

† "Principles of Biology," vol. i, p. 446.

‡ *Op. cit.*, vol. iii, p. 808.

§ "First Principles," 2nd ed., p. 489.

|| *Ibid.*, p. 500.

ment of the state of temporary stability thus established would have little chance of being perpetuated; and we have probably here the explanation of the fact that the progress of evolution reveals itself so often by sudden movements. In these cases, where the disturbing influence has rendered the equilibrium of the organism affected more or less unstable, a new centre of equilibrium will be formed, and the appearance of a fresh specific form be the result.

However fitted this explanation may be to account for the gaps which so often present themselves in developmental series of animal structures, it is far from sufficient to account for the origin of man, at least on the assumption of evolution governed merely by mechanical principles. Neither man nor animals, in fact, could have come into being at all unless there had been an organic necessity, quite independent even of the general average effects of the relations of living bodies to their environments, insisted on by Mr. Spencer. That these agencies have been very influential in the evolution of organic nature is undoubtedly true. But their influence in this respect depends altogether on the organism on which they act being in a condition of unstable equilibrium. Mr. Spencer declares, when speaking of the condition of homogeneity being a condition of unstable equilibrium, that this instability is "consequent on the fact that the several parts of any homogeneous aggregation are necessarily exposed to different forces—forces that differ either in kind or amount."* This may be true in relation to animal and vegetable forms, whose germs are supposed not to show the slightest trace of the future organism, although even as to these Mr. Spencer can say that "doubtless we are still in the dark respecting those mysterious properties which make the germ, when subject to fit influences, undergo the special changes beginning this series of transformations."† But the unstable condition of the primeval homogeneous substance of nature could not be due to the cause assigned. For it requires the impossible case of certain forces, the action of which is supposed to result in the condition of instability, existing *outside* of that substance which, as being identified with the Absolute, we must assume to be present throughout all space. The notion of an universally diffused homogeneous substance, acted on by external forces, appears to be contrary to reason; and the proper explanation of the original condition of instability would seem to be that it is natural to the primeval substance as the result of an innate energy, the internal force which constitutes its vitality. But this substance cannot have been merely "material." There is just as little room for transition from the inorganic to the organic as

* "First Principles," 2nd ed., p. 404.

† *Ibid.*, p. 444.

from the animal to man; there is but one satisfactory starting-point—nature itself viewed as organic.

If such is the case when the changes observable in nature are viewed as strictly evolutionary, much more so is it when they are traced to the lower activity of natural selection. Mr. J. J. Murphy well remarks that “the facts of variability being the greatest in the lowest organisms, while progress has been most rapid among the higher ones, shows that there is something in organic progress which mere natural selection among spontaneous variations will not account for.”* Elsewhere the same writer declares that “no solution of the questions of the origin of organisation and the origin of organic species can be adequate which does not recognise an organising intelligence over and above the common laws of matter,” *i.e.*, the laws of self-adaptation to circumstances and natural selection.† This organising intelligence is supposed to have been bestowed once for all on vitalised matter by the Creator, so as to prevent the necessity of separately organising each particular structure,‡ although it is suggested that man’s spiritual nature may be a direct result of creative power.§ Mr. Wallace objects to the law of “unconscious intelligence,” that “it has the double disadvantage of being both unintelligible and incapable of any kind of proof.”|| This is true enough, but it has the equally serious defect of re-introducing the notion of special “creation,” with all the difficulties attendant on the origin of matter, and the separate existence of independent spiritual and material substances.

Mr. Wallace himself is so much struck with the imposing position occupied by man that he thinks that “a superior intelligence has guided the development of man in a definite direction and for a special purpose, just as man guides the development of many animal and vegetable forms.”¶ He supposes, moreover, that “the whole universe is not merely dependent on, but actually *is*, the WILL of higher intelligences, or of one supreme intelligence.”** It seems to me, although Mr. Wallace thinks otherwise, that this notion completely undermines the hypothesis of natural selection. If not only the whole universe, but also a particular portion of it—man—has been divinely “willed,” analogy will lead us to believe that every other portion of the whole has thus originated.

The difficulties attendant on theories such as those of Mr. Murphy and Mr. Wallace, and the unsatisfactory explanation afforded by the theory of evolution, as usually understood, of

* “Habit and Intelligence,” vol. i, p. 348. 1869.

† *Ibid.*, vol. i, p. 295.

§ *Ibid.*, vol. i, p. 331.

¶ *Op. cit.*, p. 359.

† *Ibid.*, vol. ii, p. 8.

|| *Op. cit.*, p. 360.

** *Ibid.*, p. 368.

the origin of man, have led me to the opinion that nature as a whole is organic, and that man is the necessary result of its evolution. Not only so, however; man must be viewed as the real object of the evolution of nature viewed as a living organism. Without him nature itself would be imperfect, and all lower animal forms must, therefore, be considered as subsidiary to the human organism, and as so many stages only towards its attainment. But if living nature is an organic whole, its several parts must be intimately connected. Hence the numerous correspondences between man and the higher mammals cannot be accidental or even merely designed similarities. They betoken an actual and intimate connection between the organisms presenting them, and such an one as is consistent only with a derivation of one from the other. This view differs from that of Mr. Darwin, not in the fact of man's derivation from the ape, but in the mode and conditions under which it has taken place. Derivation, by virtue of an internal evolutionary impulse, is totally different from simple descent, aided by natural selection. In the latter case the appearance of man may be described as in some sense accidental; in the former, not only is it necessary, but it is that for which all evolution has taken place, the only condition, in fact, under which evolution was possible.

How far such a development of organic forms as I have supposed is consistent with design is a difficult question. It is apparent that when nature is conceived of as forming an organic whole, the universe becomes identified with the Absolute, of whose being relative nature is merely an expression. But is not the possession by relative existences of intellectual faculties, and of the marvellous power of insight or reflection, evidence that the same powers belong also to the absolute Being? The possession by man of intelligence is, in fact, proof that organic nature is intelligent. Still, however, the need of design is not apparent. Granting that relative nature has been evolved out of the absolute existence, such evolution can have taken only one course—that which led to man, who could appear only when the conditions of nature were fitted for him, and who *must* appear when those conditions were so fitted. Moreover, as man was from the beginning the object of organic evolution, this must have taken place along the line which led to him, without any actually preconceived design or intention other than that which is implied in the pre-knowledge of man's appearance. It does not follow, however, that other branches of organic nature besides that which ended in man may not have reached a stage of structural perfection. No doubt they have so done, and thus we can understand how it is that certain animals seem to have been, as Professor Owen asserts, "predestined and prepared for

man." The fitness pointed out by our great anatomist "of the organisation of the horse and ass for the needs of mankind, and the coincidence of the origin of the Ungulates having equine modifications of the perissodactyle structure with the period immediately preceding, or coincident with, the earliest evidence of the human race," is certainly remarkable.* I cannot see in these facts, however, anything more than a necessary coincidence arising from the progress of evolution along different planes. It is possible, however, that Professor Owen may mean little more than this, and that he would be satisfied to admit the identity between the "predetermining" agent and organic nature, acting by virtue of the laws of its own evolutionary impulse. So at least may be supposed from the fact that he rejects "the principle of direct or miraculous creation," and recognises "a 'natural law or secondary cause' as operative in the production of species in orderly succession and progression."† It is difficult to understand how otherwise there could be an "innate tendency to deviate from the parental type."

Before concluding, reference should be made to certain facts connected with the development of the brain and the human organism generally, which at first sight seem to be quite irreconcilable with the notion of man's derivation from the ape, even under the conditions I have proposed. Thus, M. Pruner Bey has shown that in man and the anthropomorphous apes there exists "an *inverse order* of the final term of development in the sensitive and vegetative apparatus, and in the systems of locomotion and reproduction." The same inverse order is exhibited in the development of individual organs. Thus it is, says Pruner Bey, with a portion of the permanent teeth; Welcher makes a similar remark as to the modifications of the base of the skull in relation to the sphenoidal angle of Virchow; and Gratiolet points out an analogous fact in the development of the brain. The language of the great French anatomist is very precise. He says:—"With man and the adult anthropomorphous apes there exists a certain resemblance in the mode of arrangement in the cerebral folds which has imposed on some persons and on which they have strongly insisted. But this result is attained *by an inverse process (marche inverse)*. In the monkey the temporo-sphenoidal convolutions which form the middle lobe appear and perfect themselves before the anterior convolutions which form the frontal lobe. With man, on the contrary, the frontal convolutions appear the first, and those of the middle lobe show themselves the last." In referring to these facts, M. de Quatrefages declares that "when two organised beings follow an inverse course in their development, the more highly developed of the

* *Op. cit.*, vol. iii, p. 795.

† *Ibid.*, p. 789.

two cannot have descended from the other by means of evolution."* If by evolution is meant simple descent under the influence of natural selection and modification of external conditions, this conclusion is certainly correct. It is true that, contrary to the opinion expressed by Gratiolet, that "the human brain differs the more from that of the monkey the less it is developed, and an arrest of development can only exaggerate this natural difference,"† M. Carl Vogt declares that the human brain may, under certain conditions, not only externally resemble that of the higher apes, but also that the superior portion of it (*parties volûtées*) in microcephalic idiots is really developed after the simian type,‡ the skull itself having both simian and human elements.§ But does not the fact that the lower part of the microcephalic skull, and the portion of the brain, which is the earliest developed, are formed on the human type, amply justify the assertion of Gratiolet that "the microcephale, however degraded, is not a brute, but only a modified man?" Is it not evident, moreover, that however highly an ape brain may be developed, it could not become like that of a man, at least by descent with natural selection? It is different, however, if we view man as the necessary product of the evolution of organic nature. We may well believe that when the sudden advance from the ape structure to that of man was made, under the conditions above proposed, the great increase in the size of the brain and the change in the position of the foramen magnum were accompanied by an alteration in the order of development, not only of the different parts of the brain, but also of the internal apparatus as pointed out by M. Pruner Bey. But the advance having once taken place, the human type can no more be lost; and although the approach to the simian type which appears in the abnormal microcephalic brain evidences the intimate connection between man and the ape, yet it furnishes no disproof of derivation, one from the other, by the agency of internal evolutionary impulse.

In conclusion, I would again refer to the fact, so strongly insisted on by M. Broca, that the truth of the theory of evolution is not dependent on that of the hypothesis of natural selection. The great defect of "natural selection" as an agent in organic evolution is that it cannot do more than perpetuate certain structural peculiarities, the appearance of which it is powerless to explain. The hypothesis is properly defined as "natural selection among spontaneous variations;" and it is the appearance of these variations which constitutes the most

* "Rapport sur les Progrès de l'Anthropologie," p. 247. 1867.

† *Ibid.*

‡ "Mémoire sur les Microcéphales," p. 197.

§ *Ibid.*, p. 81.

important part of the problem. They can be explained only on the assumption of "an internal tendency to deviate from the parental type;" and granting that this tendency results from a necessary evolution of nature viewed as an organic whole, there is no difficulty in accounting for all the facts dwelt on by Mr. Darwin without supposing the derivation of man from the ape by simple descent, although not without identifying the universe with Deity, and viewing its various manifestations as His organs.

DISCUSSION.

THE REV. DUNBAR HEATH, while praising the lucid arrangement of the paper, said that not ten lines of it were devoted to the subject intimated by the title—viz., to "Man and the Ape." The paper was upon Evolution in General, and in it Mr. Wake first asserted variation to be "spontaneous," and then gave his own explanation of variations—viz., that all nature was organic. This was a contradiction in terms, for a change which requires explanation of its causes cannot be properly called a spontaneous one. Mr. Heath, while denying that *all* nature was organic in the sense of being fitted for the formation of organs, explained the steps in nature by which matter rose through the crystallisable to the colloidal state, and agreed that all colloidal nature is organic. In his own view, Mr. Heath said that biologists seemed to turn easy into hard, and hard into easy. At every "variation" men gaped with astonishment, while with him the astounding wonder was that there should be permanence.

DR. CARTER BLAKE did not think that the word "evolution," which had been warped by Mr. Herbert Spencer and others from its original signification (as the converse doctrine to "epigenesis") was a more lucid term than the word used by Professor Owen—*i. e.*, "derivation." The existence of degraded species like the great auk or the dodo was reconcilable with the theory of "derivation," but not with those of "evolution" or "natural selection." He could not agree that the brain of man was formed upon precisely the same plan as that of the gorilla or chimpanzee. The absence of the external perpendicular fissure alone markedly distinguished the human microcephale from the equatorial ape. As regards the foot of the gorilla, it was singular to notice that, supposing the normal structure of the entocuneiform bone to be departed from by slow variations in the direction of the human foot, such variation of the more reniform figure of the aspect of the surface for the metatarsal of the hallux would render the toe of the ape less serviceable for the purposes of prehension, and more likely to perish in the "survival of the fittest." Noticing some instances of intelligence which he had observed in the spider monkey (*Ateles Geoffroyi*), he objected to the use of the word biology in the sense Mr. Heath had applied to the word. It had been well said that *Bíos* never meant life in the sense of "vitality;" it meant the "life" of a man as progressing in time—his birth, actions, and death. Plato has *Bíos ζωής*, "lifetime of life." Such words as "biology" and "evolution," there-

fore, did not tend to enlighten us. While pleading against the doctrine of natural selection, he did not wish to be interpreted as an advocate of the origin of man other than by derivative secondary laws.

Mr. LEWIS said he should like to ask Mr. Wake what was the cause of the general movement of evolution of which he had spoken? To speak of evolution without some special cause seemed to him like speaking of a steam engine working without either fuel or water.

Dr. CHARNOCK did not agree with Mr Heath's definition of organic matter. He seemed to imagine that all organic matter must be, or must have been, animate. Surely a piece of coal or a dead leaf must be termed organic. The author of the paper had not mentioned some of the anatomical differences between man and the ape. In man legs are longer than arms; in the highest ape the converse. Mr. Wake admitted that the brain in man is heavier than in the ape, but there is a difference in the form, it being more depressed in the latter. As to the teeth, although they are the same number both in the old world apes and man, and the molars and incisors are the same in form, there is a difference in the shape of the canine teeth. Then again in the ape there is a small pre-maxillary bone, and a very small perforation of the vertebræ of the os sacrum.

Mr. WAKE, in reply, said that the connection between the title and the subject matter of his paper was sufficiently apparent to be justifiable. As to the word "spontaneous" which had been objected to, he used it only in the conventional sense as denoting that the thing referred to appeared or happened suddenly without an assignable cause. Mr. Heath, while admitting that a great part of nature is organic, did not believe that *all* nature is so, the organic character first showing itself with colloidal matter. This, however, was only the ordinary view of nature, and Mr. Wake meant to convey the idea that *everything* may have had an organic origin, although at a certain point most objects cease to be organic. A plant is an organism, but when it dies its component parts are resolved into matter which is not organic. On the same principle every part of nature may once have been organic, but not every part as it now exists. Mr. Burke had said, "admit intelligence to begin with, and everything may then be explained." This is quite true, and he (Mr. Wake) believed that an intelligent Being, in some sense, originated "nature." If, however, Mr. Burke meant that a special plan had been laid down, and that nature had been developed in accordance with it by certain laws, he could not agree with him. The intelligent Being supposed had not the power to turn one thing into another totally different. Mr. Charlesworth had expressed himself as unable to grasp the special purpose for which the paper had been written, and had said that he (the author), although an evolutionist, was not an advocate of natural selection. This was true in the sense that he thought natural selection had had comparatively little influence in producing the world as it appeared around us. He thought that the world as a whole had a basis of organic life, and those who read his paper would be able with-

out difficulty to understand what it intended to convey. He agreed that the intellectual faculties of animals ought to be carefully inquired into. He thought that they differed from those of man only in their capacity for development being limited, man alone having the faculty of reflection or "spiritual insight." Although animals may know a man from another object, yet they cannot distinguish the various qualities which men can separate in their own minds, and afterwards generalise into the conception of "man." Dr. Carter Blake had suggested the use of the word "derivation" in the place of "evolution," but the former word did not express his (Mr. Wake's) meaning, which was that of "*necessary* development." Mr. Lewis, in asking him for a cause of the cause had gone too far back. With reference to Dr. Charnock's remarks as to the physical differences between man and the ape, he wished only to dwell on those connected with the brain, which were the most important. Finally, man could not have been derived from the ape merely by a process of natural selection. He must either have appeared by special creation, or by a development in accordance with organic necessity, and he (Mr. Wake) preferred the latter as the most reasonable.

The meeting then separated.

NOVEMBER 19TH, 1872.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

FOR THE LIBRARY.

From the EDITOR.—*Zeitschrift für Ethnologie*, 4 parts, 1872.

From the SOCIETY.—*Journal of the North China Branch of the Royal Asiatic Society*, No. 5, 1868.

From the EDITOR.—*The Journal of Psychological Medicine*, vol. 6, No. 4.

From the EDITOR.—*La Revue Scientifique*, 16-21.

From the SOCIETY.—*Journal of the Asiatic Society of Bengal*, part ii, No. 2. *Proceedings*, ditto, Nos. 6, 7, and 8.

From the EDITOR.—*Matériaux pour l'Histoire Primitive et Naturelle de l'Homme*, June and July, 1872.

From the ASSOCIATION.—*Report and Transactions of the Devonshire Association for the Advancement of Science*, vol. v, part 1.

The following paper was read :

THE MOABITE JARS, with a Translation. By the Rev. DUNBAR I. HEATH, M.A.

THE authenticity of Mr. Shapira's large collection of jars, bisexual images, inscribed bricks, etc., found lately in Moab, has been for several weeks a subject of controversy in archæological circles. Very carefully executed copies of the inscriptions, etc., were sent originally from Palestine to the offices of the Palestine Exploration Fund. Thence they were shown, of course, to the learned experts of the British Museum, to whom we usually look for guidance in matters of præ-Grecian alphabets and Archaic inscriptions in general. The Phœnician portions of the inscriptions present no difficulty whatever in decipherment, and but little in translation ; and it appears to me that in such cases as this the mode of proceeding ought to be that if a respectable scientific society applies to a national institution like the British Museum officially for information, there ought to be an authorised means of sending a formal report back, embodying the official opinion of that learned body. In the present case, of course, nothing of the sort has been done ; and it must be admitted that mere private opinion here and there has been expressed.

The principal reason given to me against authenticity when I urged the many obvious arguments in its favour was a personal one. It amounts merely to a want of confidence in Mr. Shapira. That the authenticity of two or three hundred pieces of pottery should be denied on no other ground than this seems to me unreasonable. Even while I now write the news comes from the European residents in Jerusalem that this denial has been injurious. A special journey appears to have been considered requisite in order to clear up doubts, and this journey has excited the native tribes round Elealeh and Dibon. It has even been considered requisite to toss away pieces of pottery before their eyes, lest a too high idea of their value should be engendered by the unusual visit. The temper of the tribes is visible in the following quotation :—

“The last ruin was Umm el Rasas, visited simply to investigate the so-called serpent stone, of which Mr. Shapira had a copy, a block of about thirty in. wide, with a bilingual inscription, and a figure apparently of a scorpion and a serpent. Unfortunately, their intention became known to the Hammydeh, and, on arriving at the place pointed out, no stone was found, but surrounding stones had been disturbed, and there was evidence of a large body having been moved. Crossing accidentally the very line along which the stone had been taken, similar traces were visible

at intervals of fifty to a hundred yards, and finally a cistern, with indications as though a heavy body had been thrown into it. Descending, it was found filled with stones, but time and the temper of the people would not allow of a minute investigation.

"From thirty to forty pieces, some of which I have sketched, were brought by Sheikh Ali Diab, as well as a fine pot, with an extremely bold inscription in plain Phœnician characters, found at Khirbet Jemil (?), near Umm el Rasas. The translation will be interesting, as there seems a possibility of its being a votive sentence regarding the ashes of the dead; the pot was closed at the top, and has seven apertures, through which the ashes may have been inserted.

"The expedition now returned to Zamát and Hesban, after a visit of eleven days to the country. It is to be regretted that it became necessary to undertake it, as the chance of obtaining any further specimens on reasonable terms is materially damaged. The country of the Hammydeh is now impassable, and it is with great difficulty that a further collection is being got together."

Our regret at this state of things may, however, be tempered by the consideration that there are vast heaps of such articles lying ready for us in the numerous untouched sites of Moab. For many tens of centuries the country of Ruth, Jesse, and King David was densely peopled by a manufacturing and mercantile race. In Judæa all relics of antiquity were sedulously destroyed by the Crusaders, but beyond Jordan no Crusader ventured, and the expedition I just mentioned from Jerusalem beyond Jordan appears to have learnt for the first time that camel loads of broken pottery are sent from those parts to Damascus, where it is used for the manufacture of cement for cisterns.

If it were not for the reasonable hope that enough inscriptions and to spare for all museums may soon be found, it would be a subject of regret that the whole of the present collection has been secured for Germany. Not that it matters whether France, England, or Germany should hold the bulk of them, but it does matter to the hard-working decipherer that he should be unable to obtain a sight of his materials without the expense and inconvenience of a journey to Berlin.

The reasonable expectation of vast finds in the immediate future is based upon the reasonable opinion that vast hordes exist, and upon the fact that an American expedition is immediately about to set out for trans-Jordanic parts. Let us hope that the fertility of the year 1872, which has given us the Hamath inscriptions and the Moabite jars, may be even surpassed by that of 1873, and that the conception of man as a

Moabite may soon fill up its place among the vacant niches where Gebal, and Ammon, and Amalek, the Philistines also, with them that dwell at Tyre, have still to be erected by comparative anthropologists.

My own inclination would not have led me to fill up nearly the whole of this paper with arguments in favour of an authenticity, the denial of which I can hardly realise. Such arguments seem, however, to be required from some one, so I will take them up briefly in the following order:—

1. The argument from the door-post in Moab compared with the Hamath inscriptions.

2. The originality of mind displayed in the pottery.

3. The expense of the alleged manufacture.

4. The improbability that the Germans have been gulled.

5. The group of arguments founded on the contents of the inscriptions.

6. The argument from the bisexual images.

First, the Moab door-post. This very remarkable “find” is at present in the position of the flower that is “born to blush unseen, and waste its sweetness on the desert air.” Not an eye seems to have been opened on it, unless it be my own, nor a breath expended on it. Any visitor, however, to the offices of the Palestine Exploration Fund may see it, in the shape of a long roll of tracing paper, covered with very large figures, hieroglyphical looking in their character, but certainly utterly unlike Egyptian. There are but nineteen distinct characters, and out of these nineteen no less than five are identical with five out of the forty-five Hamath characters, which cannot possibly have been known in Palestine by the supposed forgers of the door-post. There are, in fact, still only half of them published in a correct form, and the remainder will see the light about the same time as this paper, in the “Journal of the Palestine Exploration Fund.” I give great weight to this coincidence, from the fact that directly a portion of the Hamath inscriptions was published, scholars began to compare the symbols with scores of known alphabets, and seemed pleased when they found a few somewhat shadowy resemblances here and there, whereas, on this door-post the figures are not resemblances merely, but are palpably the same characters.

Secondly, the originality of mind displayed in the various articles of pottery. They must be seen to be appreciated. They do not display what we usually call art, in the sense of beauty, but they most certainly display a style and type of grotesque uncouthness all their own. In the absence of illustrations I will not dwell upon this, further than to note that there are some hundred or so different articles, and that there is, therefore,

ample material for substantiating the statement that they form a style peculiar to themselves, and very far removed from anything likely to be conceived, or possible to be executed, in the nineteenth century. My recognition also of the god or hero Sacus, the Socus of Homer, the *Σαυκος* or house protector of the Greeks stamped upon a domestic article may be alluded to under this heading. I pass on, therefore, thirdly, to the expense of the alleged manufacture.

The Phœnician inscription alone on the first jar consists of a hundred and twenty-nine large letters, each of them an inch high and broad in proportion. To form these hundred and twenty-nine large letters moist in clay, and to retain them moist in their places, in four circles round the outside of a moist soft jar, also of clay, to retain them accurately in those places while burning; or, more difficult still to realise by one unlearned in such arts—to press moist clay from within outwards into accurately-shaped figures, leaving the moist letters standing out; and to reduce the remaining parts of the jar to the level of the interval between the letters, seems to me of itself so difficult a task that I should name a considerable number of pounds sterling as the remuneration at cost price necessary for the manufacture of even one jar. Skilful workmen may do much, but they also charge much in these days of strikes; and in such a case the skilful workman would have to be created; and to suppose these articles to have been made abroad and covertly smuggled into Moab for the purpose of being found there, at the peril of the finders' lives, seems to me too ridiculous to be worth controverting.

It is, I am aware, not difficult to quote cases from Pope Ganganelli downwards, where forgeries have been executed. True; but then they have in all these historical cases been also found out. In order to be able to say that such and such a find is a forgery, we must go through the process of bringing forward proofs and reasons, which in the present case has certainly nowhere been attempted. This brings me to the observation that the Germans, who have eagerly and anxiously bought up these most precious records, have themselves seen and handled them, while we, who lightly impugn them, impugn what we have neither touched, nor seen, nor weighed by the evidence of any of our senses. The Germans are not generally supposed to be altogether bad judges in such a case. Professor Schlottman, of Halle, has produced a heavy article upon them in the last number of the "*Zeitschrift für Morgenländische Gesellschaft*," and has without doubt, delay, or hesitation declared them to be, what they most truly are—viz., genuine, and of great scientific value. Hitzig has also taken them in hand as clearly genuine.

But the real argument after all ought to lie in the result of the translation. The letters are by far the best set of Phœnician letters yet known to us. They are in the very best known style of form and workmanship thoroughly well known to us as the Archaic Phœnician. This, I believe, has been disputed, but not, I suspect, by any one who has seen the authentic tracings. If we connect the question of authenticity with that of the power of translation, we must admit that a mere concatenation of letters would have been very suspicious. No doubt it would. But then, on the other hand, the actual result must be doubly convincing, provided we are able to lay down fixed rules of interpretation, and to produce a satisfactory, honest translation.

The rules which I shall lay down are four. First, that since the inscription consists of four closed circles of letters, surrounding a circular jar, we must be careful, after going round the uppermost circle from right to left, to commence the second circle exactly under the commencing point of the first circle, and similarly to commence the third under the second. Now Professor Schlottman, in the article I mentioned, has attempted a translation of these lines. Unfortunately, however, for him, it appears plain that his correspondent in Jerusalem can have taken no sufficient pains to place the letters of the second and third lines in their exact positions with reference to those of the first line. Nor, again, can he have intimated to him at what point in the upper circle the inscription commences. Hence he commenced in the middle, then went round and commenced his second line four letters too far to his own right, and his third line many letters too far to the left, so that the third line was eight letters wrong in its starting point. The correspondents of the Palestine Exploration Fund were very careful in this important matter, and of course gave me a great advantage in the struggle for decipherment by their critical perception of the value of accuracy in this respect.*

Our second rule of interpretation is, that the language ought to be Hebrew, or a dialect of Hebrew. The Moabites were Hebrews, and three tribes of the Beni Israel were intermixed with them on the other side of Jordan. The Moabite stone, too, is in Hebrew.

But thirdly, I lay it down that the dialect of these jars is an Egyptianised Hebrew; and fourthly, that it is a Nabateanised Hebrew. This we might naturally expect, as Moab differed from the hilly country of Judæa in not dwelling apart from the mighty nations on her borders as Judæa did to a great extent.

Whether, however, we might have previously expected it or

* On this important matter, see the plate which accompanies this paper.

not, the language on these jars actually is a Nabataeanised Egyptianised Hebrew, and we may here observe how strong is the argument which this fact supplies for the authenticity of our find. Not only must the supposed forger have been able to create out of the depths of his self-consciousness a new style in art, not only has he executed by far the most perfect Phœnician inscription yet known, not only has he produced sentences that will fairly construe, but he has had the supreme audacity to produce this effect with only about sixteen letters out of the twenty-four, and to do so consistently by dropping just those letters which the two great neighbouring nationalities dispensed with. No one in Palestine, no one in the world, probably, except this gigantic genius, if he sat himself down to a forgery, would have thought of leaving out the letter *l* altogether for instance. This letter *l*, we know, is one of the commonest in the Moabite stone, as in Hebrew and Phœnician generally. As a matter of fact, however, *l* is absent, and as a matter of fact where *l* ought to appear the letter *r* does actually appear in its place, and as a matter of fact the letter *r* does work for *l* in Egyptian, and as a matter of inference, therefore, we deduce that the dialect of this part of Moab at the time these jars were produced was strongly Egyptianised.

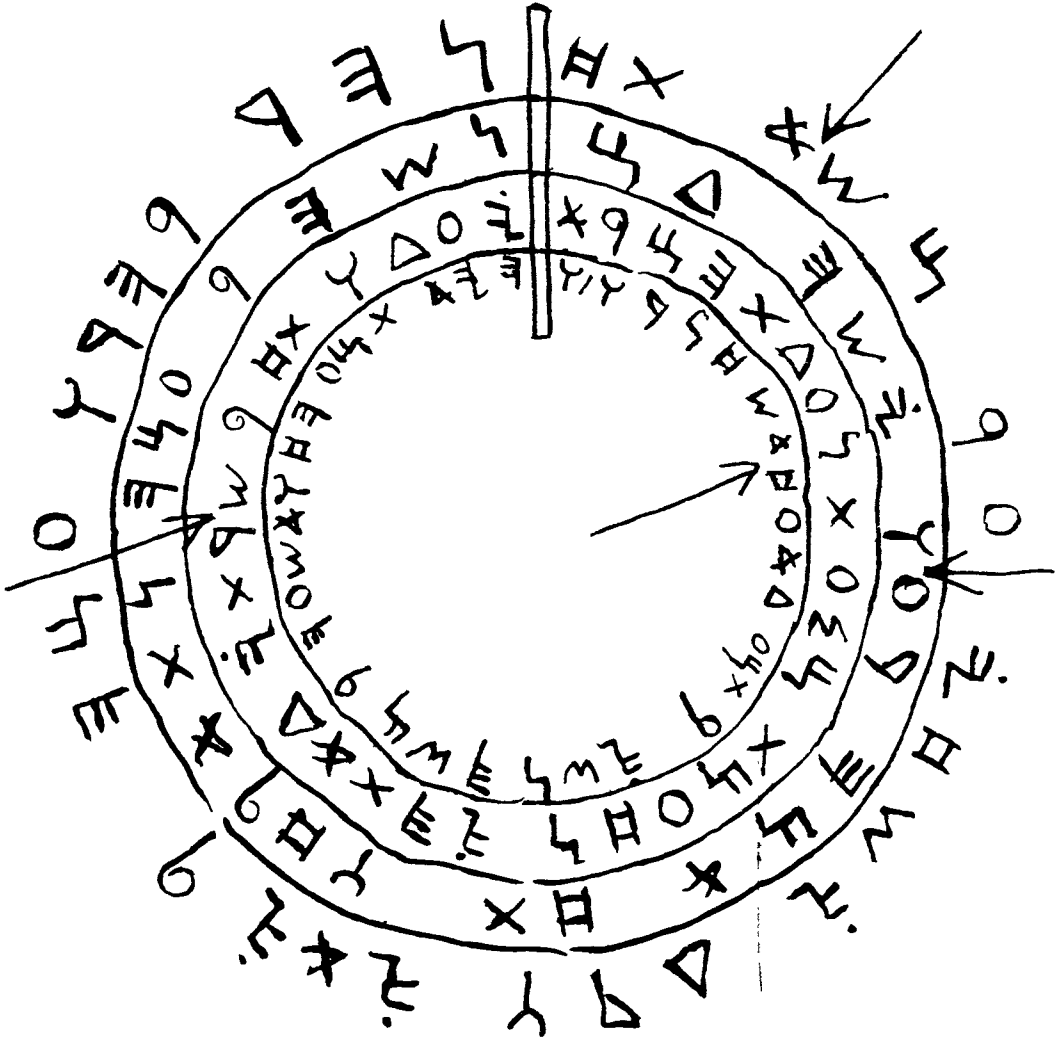
So, again, throughout the two jars there appears neither of the two common Hebrew letters tzaddi or zain. *D* and *t* do duty for them respectively. This is a Nabataean peculiarity. Curiously enough, the interchange is illustrated by the very word which I have translated—"jar." The word "*rahad*," with a suffixed pronoun, appears as the second word on this inscription. Now "*rahatz*" is Hebrew, and is known to us in the well-remembered phrase, "*Moab is my washpot*." The change from *tz* to *d* I assert to be a Nabataeanism. Curious that the quaint phrase about the washpot should be to some extent illustrated by our first find being a jar or washpot. Probably, however, Moab was a great seat of the manufacture of those useful articles. The change from *z* to *t* may be illustrated by the Greek Typhon. We have Zephon in Hebrew, and Zapuna in Egyptian.

It is well known that the Greeks denied their having received more than sixteen letters from Cadmus, the Phœnician. There is certainly not sufficient material on these two jars to allow us to build so great a theory upon them, but if it should be found that long inscriptions are turned up in an alphabet of only about sixteen letters, it might be deduced that the Phœnicians who gave letters to Greece were of a Nabataean origin.* It may be

* This paucity of letters I believe to be the principal stumbling-block at present in the mind of a Phœnician scholar who has privately given some

First Jan.

On the evidence of Rev^d J. Niel and
Dr Chaplin of Jerusalem the four letters
where I have begun the four lines are
arranged vertically on the jar. The arrows
show where Professor Schlottman begins each
line. He gives no reasons.



$\begin{matrix} & A \\ X & 9 & \Delta & \equiv & 2 & \square & \cdot & \pi & \Gamma & 5 & 0 & 0 & 0 & 3 & X \\ X & \Pi & \Gamma & \Gamma & \Gamma & \Gamma & \square & \Gamma & \Delta & \Gamma & \Delta & \Gamma & \Delta & \Gamma & \Gamma \end{matrix}$

[illegible]

1

1

3

—

1

.

TABLE 1

here remarked that a forger substituting *r* for *l* throughout the jars would hardly have allowed a statue of a goddess two feet high to be found in the same locality with an *l* in her title—El. Omt. Professor Schlottman is agreed with me in thus reading her title.

A very common word in the Hebrew language is *obed* or *abd*, as the Arabs, I believe, now pronounce it. How intelligent must have been the forger who on those jars wrote neither *obed* nor *abd* but *ubed*. It strikes me as much more likely that the dialectical variety in those parts really was *ubed*, than that the forger should have invented it.

Our forger must have not only known the alphabet of the Moabite stone, but the niceties of grammar in that remote age. We had supposed ourselves to have learnt two things in this department from that stone. One of them our forger thought he would corroborate, but the other he has disallowed. We have to thank him for agreeing with the Moabite stone in discarding five out of the seven ordinary Hebrew verb conjugations, and he has been thoughtful enough not to retain any two at hap-hazard, but just those two in which the Hebrew coincides with the Egyptian—viz., *kal* and *hiphil*. On the other hand, the personal pronoun *Hu* is found in the Moabite stone both as a masculine and a feminine, and it had been thought that the comparatively few cases in the Pentateuch where the feminine is given as *Hi* were due to the “emendations of late redactors, who attempted to make the orthography of the Pentateuch uniform with the developed state of the language.”* The forger, however, clearly differs from this view, as he gives the orthography of *Hi* distinctly for the feminine pronoun.

And now a few words on the method I followed in my decipherment. Taking the first jar, and remembering the dialectical variations I mentioned above, we see seven or eight words which may very fairly be taken as connected with Hebrew roots. I mean such words as to wash, to be gracious, to cut, and to raise; also servant and wife, knowledge and might: secondly, there are two or three Hebrew particles, such as “in,” and “this one,” and “she.” There are also proper names: for when we read, “Jai *ubed* ishachi,” we do no violence to probabilities in translating it “Jai, servant of Isaac.” I mention here that I believe the word “*obed*” is generally appropriated to the worship of *deceased* heroes or ancestors, and if so, this

attention to this question of authenticity. To him then I would remark that the great Egyptian people got on very well for some thousands of years with only thirteen consonants. These consonants are *b, p, f, m, n, r, h, ch, s, th, k, dj*, and *t*. See Champollion and Brugsch’s Grammars, also Bunsen’s “Egypt.”

* See Ginsburg on the Moabite stone, p. 27.

Isaac may not improbably be the patriarch himself. To proceed, however, with our decipherment, we have lastly, two very peculiar words, "amach" and "omt," which were the key to my translation. Amach is very common in Egyptian, in the sense of *devoted*; Omt is both Egyptian and Hebrew. The root is *om*, which means *with*: *t* is a feminine suffix, so that *omt* means *unity*, and *t-mo* and *om-t* I connect with *thummim* and what we usually pronounce *ma-tu* in Egyptian, meaning justified by union with Osiris.*

I suspect that Professor Schlottman's correspondent cannot have sent him the two little teraphim images which our clever forger was cunning enough to produce with the word "amach" on one, and "omt" on the other. These, I say, were the key to the whole riddle, and with them any Egyptologist would have been able to open the door.

A few letters I leave untranslated. I might make some sort of a sense, but I prefer waiting for more material, which will doubtless soon arrive under the auspices of the American expedition. The following are my translations:

JAR 1. Inscription on his jar dedicated by Jai, servant of Isaac, in Mesha, such as is raised in devotion to Nataracu. This is a devotion to Dov, wife of Domiadu, the same who in the might of her knowledge has been incorporated with Mesha —. She is united with Hachuasho, in Mesha; raised to unity with Daocash. May he be gracious.

JAR 2. From Jebel Attarus. Inscription on his Jar dedicated by Jehoshidu —. This is a devotion to Dahak Cosbo, wife of Dom, raised in devotion to Nataracu. May he be gracious. She is united with knowledge, raised to unity with Daocash.

I subjoin to the above the following transcription of the letters running round the two jars into the character which is commonly called the Hebrew; but I know no good reason why such a very inconvenient character as this should be dignified exclusively with the name of Hebrew, in opposition both to the Samaritan and to the Archaic-Hebrew or Phœnician.

FIRST JAR.

נהר רהרו עמה ר יאי ובר ישהי ער משא תח
 נשה ר עמה נתארתו תח אמה דעו ישה דמ
 יעדו תח ר שדת י דאתהי נהעמת משע (תנעדתהמרא)
 היא תמע החואשעה ר משה נשי ר תמע דאעהאש חנרו

* See Ecclesiastes, vii, 14, את זה לעמת זה "one in correspondence with the other."

SECOND JAR.

נהר רהרו עמה ר יהשירו (יא'אתה) תח אמה
 דהח קשוע *משה דם נשה ר עמה נתארחו
 חנרוו היא תמע המדאתה נשי ר †(ת)מע
 דאעחאש

One result of the exclusive use of the term "Hebrew character" or "Hebrew alphabet," for the square character used by the two tribes Judah and Simeon, is that a modern standard is erected in judging of dialectical varieties of writing among the Hebrew tribes. The words על for instance, and רחצ and זה and עבר are found in the literature of the two tribes. If other forms should be found among the Hebrew-Moabite tribes, we immediately refer them to our square type standard, and after writing them down as רהר תח ער and ובר we pronounce them barbarous, forgetting that both sets of forms may be equally debased, being in a modern character, which character, viz., the square Hebrew, is, in my opinion, very much below the one from which it was developed in legibility and general convenience. I would undertake to write anything fully twice as fast in the Phœnician Hebrew, as in the square Hebrew.

It might be instructive to devote some space to an examination of some of the names in these inscriptions; but it may be wiser to wait for fresh material. A third jar has indeed already been found by independent searchers; but after what has passed, it is natural that the copy of the inscription should have been sent exclusively to Germany. Suffice it to say that we ought to distinguish between Mesha and Mesho, as the Hebrew Old Testament itself does. The king named in the Moabite stone we always call Mesha, but the proper name is Mesho, and Mesha seems here to be a locality.

There remains only now the very important subject of the bisexual images. There is, in the present state of our knowledge on the subject of ancient religions, very little difficulty in seeing that the specific work of the Jews in the matter of religion, was utterly to set their face against and ultimately to succeed completely in putting down "symbolism." Such images as these now found in Moab, though meant to be symbolic of what the Jews themselves believed, were nevertheless altogether condemned by them. To suppose that any forger of

* This *m* seems a mistake for *i*.

† This *t* is omitted in the copy sent home by the Rev. J. Neil and Dr. Chaplin.

these images should have known what to symbolise, and how to do it, seems to me an outrage upon common sense.

That the ancients were philosophers, that they contemplated Nature, that they were vividly impressed with the disunion, the contest, the struggle for existence, the alternate lives and deaths in nature, we know well; and two systems alone seem possible in explanation (as it is called) of the mystery. The Aryan races leant principally to dualism, as in the Ormazd and Ahri-man theory. According to this system of philosophy or religion, two Powers are perpetually struggling in nature. They prevail alternately. Gods, in this view, are not considered as contemplative calm beings, but as fiercely contending, and even as undergoing suffering. It is worthy of remark that the Aryan races alone have accepted Christianity in a large way; the reason being that Christianity is not a religion of silence or enjoyment, but of work, labour, and suffering. The Semite system, on the contrary, is that nature is self-regenerating. When Nature dies in winter, Nature regenerates itself in spring. According to this view the Deity is a Self-existence, annually dying and being born again. The symbolism of our double images is now obvious enough, and would be comprehended even among a rude, ignorant people. What we are concerned with at present is to note that the Israelite-Hebrews living in a secluded mountainous country, were ultimately able to put down all the symbolism expressing this; and that the Moabite-Hebrews, being on the highway of traffic between mighty countries, retained the symbolism in the form of bisexual images. So the double god engendered man in his image (the Phœnicians would say), in the image of the double god engendered he him, male and female engendered he them.

There seems considerable evidence in the writings of the Jewish prophets, that the annual festival of the death and birth again of Adonis was almost tolerated in Judæa itself. Certain it is that the difference between the Phœnician Jav and the Jewish Jehovah, was that the former was distinctively and specially the new born deity in the arms of its mother.* A bronze circular tray discovered at Olympia, in Greece, and now in the museum at Athens, shows in three departments the infant god in arms, the full-grown bearded god in contest with a wild beast, symbolising the powers of evil, and the youthful god on earth again after death and resurrection, without beard or sex. The symbolism of this third division seems alluded to by St. Paul, in the passage about "neither male nor female." No doubt the very wide spread prevalence of this particular sym-

* See the "Fistis Sophia," c. 12, *Parvus 'Iaw.*

bolism was one great cause of the comparatively easy acceptance of Christianity among the ancients.*

Those who wish for information on the subject will find a large amount of material in the second volume of Lenormant's "Lettres Assyriologiques," to which I would refer as the work, not only of a most accurate, learned, and honest scholar, but of a strenuous defender of the French Church and the Christian religion.

DISCUSSION.

Mr. J. P. HARRISON on carefully comparing the letters on the jars with those on the Moabite stone, found that a majority of the letters on the stone appeared in the inscriptions on the jars. Amongst the letters, however, which occur frequently on the Moabite stone, but do not appear at all on the jars, are *b*, *k*, and *l*. Of these *b* (*beth*), as might have been expected in a Moabite inscription, occurs on the stone more frequently than any other letter of the alphabet except *aleph*, viz., eighty-three times, or, on an average, once in seventeen letters. And it enters largely into Moabite proper names, *e. g.*, Rabba, Beth-Baal, Nebo, Balak, etc. If the jars prove to be genuine, it is possible that *daleth* may be found in some cases to have been read instead of *beth*, the old forms of the letters being much alike.

Mr. COOPER remarked that it was exceedingly unsatisfactory to discuss antiquities merely from drawings; judging from which, the objects might be of any date from that of Ashmanazeer, B.C. 600, to the present century. In an artistic point of view the antiquities were not sufficiently Archaic to be reliable, and more resembled the spurious terracottas manufactured in the eighteenth century to form the collection of Pope Gauganelli. This especially applied to the Phallic and bisexual figures and emblems, which bore a far greater similarity to a western nature cultus, than to that of the known features of Semitic mythology. For the same reasons, the analogies drawn by Mr. Heath from the gnostic symbolism of the gods, $\text{IA}\Omega$ and $\text{EA}\Omega$, were of too recent a period to elucidate the subject. In a purely philological sense Mr. Cooper did not agree with a translation composed of words and letters from languages which had only a geographical affinity to Moab. The sole instance adduced by Mr. Heath, that of an Hieratic papyrus of the twelfth dynasty, was unique, and it besides contained only a few foreign words; while the grammatical errors would be just such as a clever forger would fall into, who had but a cursory knowledge of the Phœnician language. At the same time, while differing from Mr. Heath's conclusions, Mr. Cooper was of opinion that great credit was due to that gentleman for his assiduity, and the very ingenious theory he had put forth, which he hoped would awaken an interest in these and similar matters that the society would not let drop.

* The death and resurrection of a deity were by no means a new or strange idea to them.

The Director read the following paper :

On HUMAN REMAINS and OTHER ARTICLES from Iceland. By
Captain R. F. BURTON, H.B.M.'s Consul, Trieste.

I HAVE the pleasure to forward, for the inspection of the Anthropological Institute, a small collection of human remains and other articles from Iceland.

The site of the "find" will readily be found upon the four-sheet map of Gunnlaugsson and Olsen. Cast the eye eastward of the great southern stream "Markarfljót," march or forest flood—whose eastern delta-arm debouches nearly opposite to Vermannaeyjavr—Islands of the Westmen—that is to say, of the Irishmen. You will see on the left (east) of the stream the little valley of Thórsmörk, the grove of Thor, a good sturdy old god whose name still lives and thrives in Iceland. He was even preferred to Odin—"Hinn Almáttki A'ss," "that almighty A'ss"—by the people of Snowland; and in more modern days he was invoked when a doughty deed was about to be done, the deities of Christianity being preferred only when the more feminine qualities of mildness and mercy were to be displayed.

The valley in question is described by the "Oxonian in Iceland" as a "beautiful, green-wooded spot," near which the Markarfljót flows. About eight miles long, with precipitous sides, its site is bisected by a narrow but tolerably deep "boulder-river"—a bugbear, by the by, of Icelandic travel—and this must be repeatedly forded. The map shows a green patch, the shrubs may average six feet, whilst one monster, a mountain ash, attains the abnormal attitude of thirty to thirty-six feet. It is one of the tallest, if not *the* tallest in the island. The two "giant trees" of Akreyri, which every traveller is in duty bound to admire, do not exceed twenty-five feet.

Reaching, on July 16, 1872, Thingwalla (Dingwall or Thingwall), after a Cockney tour to Hekla and the Geysirs, I met a young Englishman, who was returning from a sketching expedition round the now rarely-visited south coast. From Hekla I might easily have made Thorsmörk in a day, but the depôt of bones was then unknown to me. Mr. W—— had travelled from the Eyvindarholt farm, west south-west of the site of the find, in some six hours of fast work, and complained much of the road. There are only two guides, and the half-dozen influents of the Markarfljót were judged dangerous. It is only fair, however, to state that he had read the "Oxonian in Iceland," and he was prepared to ford the terrible torrents, nearly three feet deep! in boots and "buff." After passing the sites of many fine farms, now destroyed by the ever-increasing ice, he entered the valley from Eyvindarholt by a rugged entrance, leaving the

bone heap about half way and to the right of his track. The remains lie under a cliff where much rocky matter, possibly moraine, has fallen. Above it is the ice-foot, projected by the great glaciers and *nerés*, Merk-Jökull and Godalands Jökull, which rise to the north-east and south-east of it, whilst the rest of the valley, where eternal winter has not overwhelmed the woods, is the usual Icelandic green—vivid and metallic. The heaps evidently consist of

“ The bones of men
In some forgotten battle slain,
Bleached by the drifting wind and rain.”

Social tradition assigns them to the troublous times of “Burnt Njal,” made known to England by that ripe Scandinavian scholar, Mr. G. W. Dasent. This must be expected in these parts of Iceland; several of the remains, however, are described as those of infants.

From Bjarni Finnbogusson, who as a “youth of great energy and pluck” had accompanied Mr. Shepherd, of north-western peninsula fame, and who, developed to a prodigious rascal, had undertaken Mr. W——, I took the cranial fragments marked A and B. Arrived at Reykjavik, he agreed for twenty-seven rix-dols. (say £3) to ride back and bring me as many skulls as could be found or dug up. After attempting in vain—he had taken earnest money—to throw me over in favour of another party of travellers, he set out on Saturday, July 20. He was not to return till the next Friday evening, but wishing to secure more victims, he came back on Thursday, too soon for any good results. Also, he charged me for doing nothing thirty-two rix-dols. instead of twenty-seven rix-dols., which extortionate demand was satisfied rather than run the risk of men saying that an Englishman had shirked payment. I have the pleasure, despite sundry certificates obtained from various innocents, his dupes, to give him the very worst of characters, and strongly to warn future travellers in Iceland against him. The guides at Reykjavik are not worse than the generality of their craft, *pace* Mr. Baring-Gould; some are better; but Mister Bjarni—he is generally called by his English employers Blarney and Barney—is a bad lot, who knows well how to *pelare la quaglia senza farla gridare*.

The following are the principal items herewith forwarded:—

Three fragments of thighbones.

One large hone. Three smaller.

One parcel of sundries.

One broken spindle (?). Steatite (?).

The hones, of which there is an interesting collection in the young museum of Reykjavik, are interesting. The old world

Icelanders, as Uno von Troil informs us, ever held it a "noble art to understand well how to sharpen the instruments of death." I add a pair of Iceland shoes, the "revelins" of our Scoto-Scandinavian islands, as they readily explain why the people are not mountaineers. Also a specimen of the normal pack-saddle, with pegs of reindeer horn, and the very appropriate "namdahs", peat slabs, the *Menyanthes trifoliata* being always preferred. It will warn travellers what to expect, and tourists will select their "impedimenta" accordingly.

The following paper was read by the author.

NOTES on HUMAN REMAINS brought from Iceland by Captain Burton. By C. CARTER BLAKE, Doct. Sci., M.A.I., Lecturer on Comparative Anatomy and Zoology at Westminster Hospital.

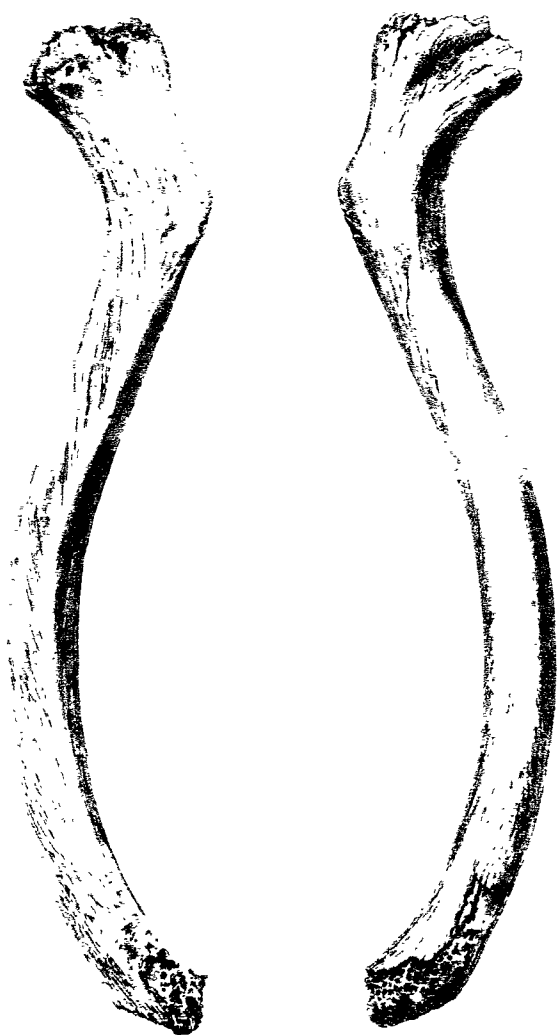
THE remains which Captain Burton has brought from Iceland are composed of fragmentary evidences of man, hog, ox, and horse.

I. MAN.

There are five races of man with whom any remains which may be found in Iceland may be compared with a view to their identification—the Norwegian, Skrælling or Esquimaux, Irish, Lappish, and Russian. I shall briefly pass over the chief characters of these races, and as the Norwegian is the race which forms the majority of the Icelandic population at the present time, I shall commence with it.

The late Dr. James Hunt, during his tour in Norway, collected an enormous amount of statistical facts with regard to the cranial measurements of the Norwegians, which were verbally communicated to the British Association for the Advancement of Science at Birmingham.

The publication of the memoir containing them was postponed at the wish of the author, and I am consequently only able to refer to my own rough notes, taken at a time when I examined the manuscript of my lamented friend. The general results seem to have been that the Norwegian skull, excluding from consideration all persons apparently of Lappish descent, was excessively short and round, that cases of brachistocephaly were frequent, and that cases even of hyperbrachistocephaly were to be found. The district investigated by Dr. Hunt was chiefly to the north of Drontheim, and especially the neighbourhood of Hammerfest. The Swedish skull, on the other hand, appears to be dolichocephalic to a degree; while the researches of Dr. Beddoe on the head forms of the Danes indicate a population whose cranial index oscillates from 85·9 to 75·3.



The cranial characters of the Esquimaux, Irish, Lappish, and Russian races have been so often described, that I pass over the minute comparison, and proceed at once to the evidences on the table. These consist of the following specimens :—

1. Fragmentary calvaria of adult human individual. The contour of the skull has been brachycephalic, though its measurement is precluded by the fact that the left parietal, which alone exists, has been broken off from the frontal bone. The frontal region is bombate. Moderate superciliaries overhang a shallow supernasal notch. The nasal bones extend forwardly, and have not the slightest approach to the form presented by the Esquimaux, and in the "Turanian" skulls described by Dr. Pruner Bey. The superorbital foramina are converted into notches on both sides. A small piece of the alisphenoid bone exists, attached to the right frontal, indicating that there was a normal spheno-parietal suture. The dentitions and seriations in the coronal suture have been deep. The parietal bone of large size accords with the frontal in all essential characters of these sutures.

The occipital bone is in a very fragmentary condition. It is not marked with any prominent ridges for the attachment of muscles, a fact which, coupled with the small development of the mastoid processes, leads the observer to consider that the present skull has belonged to a female.

Three petrous bones, with fragmentary mastoid processes attached, exist in the collection. The smaller size and parial relationship of two of these render it probable that they belonged to one individual, and that the same whose cranial vault has just been described. One large, light, petrous bone appertains to an individual of much larger size, possibly masculine, but I regret that no other specimens are found of this interesting person.

A fractured palate, with two teeth *in situ* (the first and second molars), leaves evidence highly conclusive as to the food of the inhabitants of Thorsmörk. The crowns of the molars are much attrited by the consumption of hard substances, and are in the same condition as is presented by the teeth of the neighbouring but different race of Skrällings. The first and second molars are both implanted by three fangs.

The right clavicle (pl. xix), which is found with both extremities broken away, indicates an individual smaller in size, and with lighter and more slender clavicles, than the Australian drawn by Owen in "Trans. Zool. Soc.," vol. v, plate ii, figure 4, and of course more so than in the European drawn in figure 2 of the same plate. Three long and slender femora, a right first rib, a large axis vertebra, a fragment of shattered humerus, and a cuneiform carpal bone are found in the collection.

II. HOG.

The remains consist entirely of fragmentary limb bones and of a few teeth. These need not be noticed in detail.

III. HORSE.

The equine remains from Thorsmörk are interesting. The first molar, and the fourth premolar tooth of the lower jaw, as well as the third deciduous molar of another individual, indicate the existence of a horse of ordinary dimensions as large as the ordinary European horse of the present day, and larger than the Shetland or Dartmoor ponies. There are few points of resemblance between these teeth and those of the *Equus speleus* figured by Owen. ("Philosophical Transactions," 1869, plate 57.)

IV. OX.

Teeth of the *Bos taurus* are present, though in an imperfect condition.

From the above remarks it will be, I believe, clear that the skulls now described belong to the Norwegian race, though possibly there may be an admixture of Celtic blood derived from the descendants of the Irish prisoners brought into Iceland by the Norsemen. But in no sense can these be termed any Esquimaux or "Boreal" affinities. That prior to the year A.D. 860, when the expedition of Naddod to "Sneland" brought Iceland face to face with Norwegian civilisation, a more ancient race, allied to the Esquimaux, may have existed in Iceland is a possible speculation, but one of which as yet we possess no anthropological proofs. The domestic fauna which exists in Iceland appears to accord for the most part with that of Norway, and the people do not appear to possess any intermixture of Esquimaux blood.

DISCUSSION.

MR. MAGNUSSEN said, as regards the possibility of an admixture of Esquimaux blood in the Icelandic nation it cannot be maintained on historical grounds. There is no record extant to countenance the supposition that at any time Iceland has been inhabited, wholly or partially, by this polar race. The island lies out of the belt of the Esquimaux, and he would find himself there entirely out of his element, the conditions for the existence of human life in Iceland being entirely different from those on which life in the polar regions depends. The parts of the country first discovered by the Norwegians were found to be entirely uninhabited; and it was first in A.D. 874, or thereabouts, that the first settlers came upon living human beings there. These, however, were not Esquimaux, but Irish culdees, who had taken up their hermit abode in some of the outlying islands off

the south and south-east coast—their solitude being more congenial to the spirit of the anchorite than a residence on the mainland, which meant a more energetic fight with nature than a residence on the islands. The spirit of priest and pirate being then no more homogeneous than now, the Westmen—as they were called by the invader—were soon destroyed. This is, briefly stated, what we learn about these Westmen from Icelandic sources of history. But from Irish sources we learn more. The Irish monk Dicuil, of the eighth century, has written a book called “*De Mensura orbis Terræ*,” in which he says that in A.D. 795, he spoke to some Irish hermits having returned from an island in the north, which he calls *Ultima Thule*, and which from his description can be none other than Iceland. It is therefore certain that Iceland had been discovered from Great Britain or Ireland some seventy years at the least before the Norwegians ever came there. As to the human remains before us, they need be no older than the eleventh century, unless scientific evidence should prove the contrary, for at the beginning of that century, and long afterwards, *Thórsmörk*, the locality from which they are said to come, was an inhabited countryside. Their real value, I presume, depends entirely on their antiquity; but being no philosopher in matters of this nature, I take leave of the bones and Captain Burton’s paper, which has thus far disappointed me, that I have learned from it much less than I anticipated.

Dr. CARTER BLAKE agreed with Dr. King that no affinities to the Esquimaux were presented by the present specimens. Many Lapp skulls existed in the Continental museums, and some *Tschuktschi*; but there was great dearth of Esquimaux skulls from Behring’s Straits. On the hypothesis that the Aino skulls exhibited Esquimaux affinities, it was difficult to discuss the question. Dr. Rae’s observations on the stature of the Esquimaux were certainly interesting. The skeletons in our museums were short and stout; but how far were they typical examples of the race? The circulation of the queries by the Arctic Exploration Committee would tend to elucidate these questions. With regard to the observations which had fallen from Mr. Erik Magnusson; he was himself “agreeably disappointed” that the Institute was not to be converted into a ‘*holmgang*’ wherein to criticise Captain Burton’s excellently narrated facts. He failed to perceive what evidence a French or Irish monk could have possessed of Culdees in Iceland in A.D. 795, as Iceland was not discovered (according to Mr. Magnusson’s statement) till A.D. 874, and according to ordinary chronologists, till A.D. 860. In matters wherein the veracity of a distinguished traveller had been attacked, it was necessary that the utmost care should be taken respecting facts and dates. Captain Burton in no part of his paper assigned a high antiquity to the bones, which may either belong to the time of Björnt Njal, or to a far more recent period.

The meeting then adjourned.

DECEMBER 3RD, 1872.

SIR JOHN LUBBOCK, Bart., F.R.S., *President, in the Chair.*

THE minutes of the last ordinary meeting were read and confirmed.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the AUTHOR.—*Les Derniers Travaux relatifs aux Bohémiens*, by Paul Bataillard.

From the SOCIETY.—*Proceedings of the Royal Society*, vol. xx, No. 138.

From the AUTHOR.—*Project of an Instrument for the Identification of Persons*, by Joseph Bonomi.

From the EDITOR.—*Human Nature* for December, 1872.

From the SOCIETY.—*Oversigt over det Kongelige Danske Videnskabsnernes Selskabs*, No. 3, 1871, No. 1, 1872.

From A. W. FRANKS, Esq.—*Berliner Gesellschaft für Anthro., Ethno., und Urgeschichte*, 13, 17, April 1872.

From the EDITOR.—*Nature* (to date).

Colonel A. LANE FOX exhibited a series of stone celts, and read the following communication thereon:—

COLONEL A. LANE FOX exhibited seven stone celts presented to him by Colonel Pearse, R.A., who procured them from the grove and hill-top temples of the Malayalis or hill tribes of the Shevaroy Hills. Salem is the capital of this district, situated on the railway, half-way between Madras on the east, and Beypore on the west coast.

The following are the forms and dimensions of these objects: No. 1. $5\frac{1}{2}$ in. in length, $2\frac{1}{2}$ in. greatest width, $1\frac{1}{2}$ in. thick, slightly chipped edge, almond shaped. No. 2. 5 in. in length, $2\frac{3}{4}$ in. in width, $1\frac{1}{2}$ in. thick, chipped on edge, nearly triangular. No. 3. $4\frac{1}{2}$ in. in length, 2 in. in width, $1\frac{1}{4}$ in. thick, triangular. Nos. 4 and 5. $3\frac{1}{2}$ in. in length, 2 in. and $1\frac{3}{4}$ in. in width, $1\frac{1}{8}$ thick, irregular wedge-shaped. Nos. 6 and 7. $2\frac{3}{4}$ in. in length, $1\frac{3}{4}$ in. in width, $1\frac{1}{4}$ and 1 in. thick. All appear to be composed of a hard dark-coloured trap rock, and are a good deal weathered.

Another stone of jasper, found in the Kamptee cantonments, is a purely natural form. This, Colonel Fox observed, was the second natural pebble he had received within the week from distant countries; one from India and the other from Greece,

both forwarded by intelligent observers, showing how necessary it is to study closely the lines of fracture, in order to distinguish readily the natural from the artificial forms.

By a communication from Colonel Pearse to Colonel Fox, it appears that these celts are deposited as votive offerings by the Malayalis in their temples to Purinall, their chief deity, and are called by them "Wigginespoora," which means "that which takes our ills upon itself." They are not made by the Malayalis, but are found by them in the bed of a river half-way up the hills, *i. e.*, about 2,500 feet above the sea level, and chiefly in one place near where the present British road crosses the river. There are not many of these aboriginal temples existing now-a-days, and they are chiefly in out-of-the-way hill places, and are constructed of wood. Colonel Pearse adds that these celts, when found by the Aryan populations of the plains, are considered by those who know anything about them (and there are not many who do), to be the thunder bolts of Vishnu, *i. e.*, of God. Of the seven specimens exhibited, four will be presented by Colonel Pearse to the Christy collection, and he has also deposited some in the Madras and Bangalore museums.

By this instructive but only too brief communication, Colonel Pearse adds to our knowledge of the distribution and attributes of these implements of Southern India. Mr. Bruce Foot, in a paper read before the International Congress of Prehistoric Archaeology of 1868, had already informed us of his discovery of implements of neolithic types in the neighbourhood of Madras and Nellore. They were there found by him in rain-gulleys on the surface, associated with stone circles and intrenchments attributed by the natives to the Kúrúmbers or mythical inhabitants of prehistoric times, and overlying the laterite formations which contained the ruder implements of palæolithic types, the two classes of implements thus corresponding accurately, both as regards form and position, to the neolithic and palæolithic types discovered in Europe.

Further to the north, in Bundelcund and the neighbourhood of Jubbulpore, stone celts have also been found, and in Burmah nearly similar implements, known by the appellation of mo-gio, have also been discovered by Mr. Theobald; they are there, as by the Aryan inhabitants of the plains about Salem, regarded as thunderbolts; and they are also considered influential in rendering their possessor invulnerable. More detailed information respecting these South Indian stone implements would be desirable, and more especially it would be interesting to know whether, as suggested by Colonel Pearse, there is any marked difference in the superstitions associated with them by the Aryan and hill-tribes, as affecting the religious beliefs of those people.

Together with the stone implements, Colonel Pearse also sends a large iron adze and handle of very antique form, respecting which he says "I bought it of a stone cutter on the western-coast of India, at Cannanore. It is for smoothing laterite stone, a soft spongy stone of which all the buildings there and thereabouts are built. You see how simply it is put together, as the men of other days no doubt hafted their adzes. And the shape tells us the use of many of those huge stone hatchets, one of which I have seen in your collection, and another found in Guernsey, I saw with Mr. Lukis. I thought you might like this, and thus secured it."

Colonel FOX then read his Report of Anthropology at the Meeting of the British Association, as follows:—

REPORT *on* ANTHROPOLOGY, *at the* MEETING *of the* BRITISH ASSOCIATION *for the* ADVANCEMENT *of* SCIENCE *for* 1872, *at* BRIGHTON. By Colonel A. LANE FOX, Vice-President of Section D. and Chairman of the Anthropological Department.

At the request of the Council I lay before the Society a Report on the Anthropological Papers, read at the recent meeting of the British Association, at Brighton.

This having been the first meeting of the Association, held since the adoption of the new regulations, under which the officers are appointed beforehand to the department of Anthropology, it became possible to classify the papers so as to devote a separate day to each branch of Anthropological science. The advantage of this arrangement soon became manifest. In consequence, however, of the regulations not having been thoroughly understood, many authors failed to send in their papers at the appointed time; owing to this cause, and to the inability of some of them to attend on the days fixed for the reading of their papers, the classification was not as complete as could have been desired. It is to be hoped that in future the particular attention of authors may be directed to the regulations on this head, in order that full justice may be done to their contributions, and that each branch of the science may receive due attention in the deliberations of the department.

The arrangements for the study of Anthropology have, upon the whole, been promoted by the recent changes. Some of the provisions affecting the practical working of the regulations may, however, in all probability require revision hereafter.

Sir JOHN LUBBOCK, Bart., M.P., F.R.S., having been named President of Section D, Biology, the following officers were appointed to the sub-department of Anthropology :

Chairman—Colonel A. LANE FOX, Vice-President of Section D.

Secretaries—F. W. RUDLER, Esq., and J. H. LAMPREY, Esq.

The several papers classified by subjects, were read during the successive days of the meeting in the following order :

THURSDAY, August 15th.

Opening Address by Colonel A. LANE FOX, Vice-President.

PREHISTORIC ARCHEOLOGY.

1. Results of ten years' Barrow Digging in the Yorkshire Wolds. By the Rev. Canon Greenwell.

2. Exploration of some Tumuli on Dartmoor. By C. Spence Bate, Esq., F.R.S.

3. On some Bone and other Implements from the Caves of Perigord, France, bearing Marks indicative of Ownership, Tallying, or Gambling. By Professor Rupert Jones, F.R.S.

4. Discovery of a Flint Implement Station in Wishmore-Bottom, near Sandhurst. By Lieut. Cooper King, R.M.A.

FRIDAY, August 16th.

ETHNOLOGY AND PHILOLOGY.

1. On certain Geographical Names in the county of Sussex. By Dr. Charnock.

2. On the Etymology of certain River Names. By Dr. Charnock.

3. On the Gipsy Dialect called Sim. By Dr. Charnock.

4. On the Origin of Serpent Worship. By C. Staniland Wake, Esq.

5. On the Origin of Alphabets. By John Evans, Esq., F.R.S.

6. On the Ethnological and Philological Relations of the Caucasus. By Hyde Clarke, Esq., D.C.L.

7. On some Evidence suggestive of a Common Migration from the East, shown by Archaic Remains in America and Britain. By J. S. Phené, Esq.

8. On the Predominating Danish Aspect of the Local Nomenclature in Cleveland, Yorkshire. By the Rev. J. C. Atkinson.

SATURDAY, August 17th.

PREHISTORIC ARCHEOLOGY.

1. Report on the Victoria Cave, explored by the Settle Cave Exploration Committee. By W. Boyd Dawkins, Esq., M.A., F.R.S., and R. H. Tiddeman, Esq., M.A.

2. On some Stone Implements and Fragments of Pottery from Canada. By Sir Duncan Gibb, Bart.

3. On a Patto-Patto from New Zealand. By Sir Duncan Gibb, Bart.

4. On the Primitive Weapons of Ancient India. By Sir Walter Elliot, K.C.S.I.

5. Second half of paper on the Results of ten years' Barrow Digging in the Yorkshire Wolds. By the Rev. Canon Greenwell.

MONDAY, August 19th.

ETHNOLOGY—DEDUCTIVE AND DESCRIPTIVE.

1. On some Skulls discovered by Canon Greenwell in the Yorkshire Barrows. By Professor Rolleston, M.D., F.R.S., Professor of Physiology at Oxford.

2. On some Skulls of the Weddo of Ceylon. By Professor Rolleston.

3. Notes on the Looshais. By Dr. A. Campbell, M.D.

4. On the Gāro Hill Tribes, Bengal. By Major Godwin-Austen.

5. On the Religious Cairns of the Himalayan Region. By R. B. Shaw, Esq.

6. On the Manyema or Manyema of Dr. Livingstone. By Hyde Clarke, Esq., D.C.L.

7. On the Roumanian Gypsies. By Dr. Charnock.

8. On the Ethnological relations of France and England. By Dr. Nicholas, M.A.

9. On the pretended Identification of the English Nation with the Lost Tribes "of the House of" Israel. By A. L. Lewis, Esq.

TUESDAY, August 20th.

PSYCHOLOGY AND GENERAL ANTHROPOLOGY.

1. On the Relation of the Parish Boundaries in the south-east of England to great Physical Features; particularly to the Chalk Escarpment. W. Topley, Esq., Geological survey.

2. On Theories regarding Intellect and Instinct, with an attempt to deduce a satisfactory conclusion therefrom. By George Harris, Esq.

3. On Western Anthropologists and extra-western Communities. By J. Kaines, Esq.

4. On the Fossil Human Skeleton of Mentone. By M. Mogridge, Esq.

5. On Rubbings from St. Patrick's Chair, Co. Mayo, Ireland. By R. E. Symmes, Esq.

6. Strictures on Darwinism: the Substitution of Types. By H. H. Howorth, Esq.

WEDNESDAY, August 21st.

GENERAL ANTHROPOLOGY.

1. On a Hypogeum in the Western Isles. By A. A. Carmichael, Esq., with Notes by J. F. Campbell, Esq., of Islay.
 2. On a Silicified Forest in the Rocky Mountains, with an account of a supposed Fossil Chip. By Professor H. A. Nicholson, M.D.
-

COLONEL LANE FOX's opening address was divided under three heads, embracing—1. Some remarks on the continuity of culture. 2. On the relative value of certain classes of evidence in tracing the continuity of culture in pre-historic times; and 3. On the defects in the existing machinery of anthropological science, advocating a better organisation of our local and metropolitan societies, with a view to their special and combined action in promoting anthropological research. Canon Greenwell's paper was confined to a description of the round barrows of the district which he has explored during so many years. Inhumation and cremation appear to have been practised contemporaneously in this region, although the former is by far the most common in these Wolds. The one process does not appear to have been older than the other in the round barrows, nor has the difference been one of social rank or sex. Burials by inhumation are invariably contracted, and small holes dug in the natural surface apparently to contain food are not uncommon in connection with these interments. In two hundred and forty-eight interments by inhumation and cremation, thirty-nine were associated with articles of flint, ten with bronze, and three with articles of horn. Out of the same number of burials, only five contained articles of personal decoration, and sixty-nine were associated with pottery. The burials appear to have belonged, for the most part, to people in a humble condition of life, but they had an organised society, possessed domesticated animals, and cultivated grain; they manufactured woollen fabrics, and had some little skill in metallurgy. Their bronze weapons consisted of triangular knife daggers and plain flat celts, both of the simplest form. The round barrows yield both dolichocephalic and brachycephalic skulls, and are attributed by Mr. Greenwell to the early bronze period. The reading of this important and long-expected communication attracted considerable attention, and will form a valuable preface to Mr. Greenwell's more elaborate and detailed work, which is shortly to be published.

The most important point in Mr. Spence Bate's paper consisted in the discovery of an oval object of amber in one of the Dartmoor barrows opened by him, which was at once recognised by the

archæologists present as the pommel of a bronze sword or dagger. It is believed to be unique. Professor Rupert Jones drew attention to some incised marks found upon implements of bone in the caves of Perigord, France, comparing them with similar marks of ownership, or used as tallies, or for gambling, by the North American Indians, Esquimaux, Australians, and others. His paper will be published in the "*Reliquiæ Aquitanicæ*." Lieutenant Cooper King's paper had reference to the discovery of flint flakes on the surface in Wishmore Bottom, near Sandhurst, and to the topographical changes which appear to have taken place since they were deposited.

A report was read by Mr. Boyd Dawkins on the explorations made during the past year in the Victoria Cave by the Settle Cave exploration committee. A cutting was made in a layer of stones near the surface, in which were found several bronze gilt ornaments of Roman workmanship and others which appeared to be Celtic. They were associated with the remains of the Celtic shorthorn, the goat, horse, and pig, and they probably belonged to some Romano-Celtic family which had taken refuge in the cave between the fifth and first quarter of the seventh century, when the kingdom of Strath Clyde was conquered by the Angles. Beneath the Romano-Celtic layer were found pieces of chipped flint and rude bone implements, together with bones of ox and bear. Beneath this again another shaft was sunk, resulting in the discovery of the still older occupation of the cave by hyenas, the broken bones of which showed that they must have been there in considerable numbers. With them were also found the gnawed bones of rhinoceros, cave bear, mammoth, and reindeer. These relics belong to the pleistocene period, and are probably of the same date as the Kent's Hole and Kirkdale caverns.

Mr. Moggridge gave an account of the recently-discovered human skeleton by Dr. Rivière in a cave near Mentone. The skeleton was lying on its left side, in an attitude such as might have been assumed in sleep. It was eight feet beneath the modern floor, and nine feet from the entrance. The body was lying N. and S., with the head to the S. Eye teeth of deer and small shells, both pierced, encircled the skull; possibly they may have ornamented a fillet. In contact with the body flint implements had been placed, and a circle, or rather oval, was formed around by rude stones in juxtaposition. A mass of metallic grain (oxide of iron), four inches long and one inch wide, was found touching the teeth, as if one end had been placed within the lips. The shin bones of this skeleton were platycnemic, like those of the skeletons discovered by Mr. Busk in the caves of Gibraltar. Beyond the fact that it is of the

stone age and associated with deer, no date can be assigned to this skeleton.

Sir Duncan Gibb read two short archæological papers which will probably be submitted to the Institute. Mr. A. A. Carmichael gave a description of an underground dwelling at Druin-nah-Uamh, in Valaquoie, on the north-west coast of north Uist, one of the Hebrides. The ground plan of this structure was crescentic; a dome-shaped roof was formed by overlapping stones, and there were four recesses in the walls. On the floor were found fragments of broken pottery, antlers of the red deer, and bones of the ox, pig, and goat or sheep; with mussel, limpet, cockle, periwinkle, and a few broken scallop shells. Mr. Campbell, of Islay, also contributed some remarks upon this structure. Professor Nicholson, of Toronto, exhibited to the meeting a silicified chip of wood found in a silicified forest near Pikes Peak, in the neighbourhood of Colorado city, in the Rocky Mountains. The chip appeared to have been cut across the fibres of the wood with an instrument which, it was suggested, could scarcely have been of any other material than iron, and silicified afterwards, but no evidence was offered as to the date of the forest.

In the department of Ethnology and Philology, Dr. Charnock contributed four papers—two on the derivation of local names in Sussex, and two on the gipsies. It is unnecessary to enter into a description of these papers, as they will in all probability be submitted to the Institute. Mr. Evans's paper "On the Alphabet and its Origin" was divided under three heads, relating, 1. To the origin of writing, and the method of its development in different parts of the globe; 2. To the original alphabet from which that in common use amongst us was derived; and 3. To the history and development of that original alphabet. Mr. Evans supposes that the Phœnicians, borrowing the idea from the Egyptians, struck out for themselves a more purely literal, and therefore more useful form of alphabet. Their alphabet, unlike the letters of the Egyptian hieroglyphics, does not appear to consist of merely a few survivors from a whole army of symbols; on the contrary, it seems to present some trace of arrangement, and the symbols representing the letters appear to be grouped in pairs or threes, each consisting of objects in some manner associated with each other. Mr. Hyde Clarke, in a paper on the ethnological and philological relations of the Caucasus, endeavoured to identify the Ude with the ancient Egyptians, the Abkas with the Falasha of the Upper Nile, the Circassians with the Dravidians, and the Georgians with the Caucaso-Thibetans. The Ude and the Abkas he believes to be connected with the statement of Herodotus as to the Egyptian

colony established in Colchis by Sesostris. Mr. Phené, in continuation of a paper read at the previous meeting of the British Association at Edinburgh, contributed some further evidence tending, in his opinion, to confirm the existence of serpent worship in Argyllshire. The Rev. J. C. Atkinson, in further extension of a paper formerly contributed to the Ethnological Society, on the predominating Danish aspect of the local nomenclature of Cleveland, Yorkshire, showed that out of something like two hundred and fifty Cleveland names dating back to mediæval times and earlier, upwards of two hundred and ten, or considerably more than eighty per cent. must be ascribed to Danish as distinguished from an English or an Anglican source.

In a paper on the primitive weapons of ancient India, Sir Walter Elliot described the forms of the weapons in use by the Dravidians and others with whom he had come in contact during his long Indian experience. His researches lend confirmation to the hypothesis formerly suggested by the writer of this Report in two papers on primitive warfare, published in the "Journal of the Royal United Service Institution," as to the probable identity of certain weapons in use by the Australians, Dravidians, and ancient Egyptians, and show that these distinct races, which Professor Huxley has traced to the Australioid stock, are singularly alike in some of their arts and warlike contrivances. Professor Rolleston brought before the meeting a large number of detailed measurements of skulls obtained by Canon Greenwell in his excavations. His examination of these skulls had been conducted independently of any knowledge of their archaeological surroundings. Two types of skull, the same as have been described by Dr. Thurnam in his well-known papers, were found in the series submitted to him. Skulls of the dolichocephalic and brachycephalic types were frequently, however, found to bear the same label, and might be presumed, therefore, to have come from the same barrows. If it should turn out to be the fact that these two kinds of skull had been found with the same archaeological surroundings, this would be a different condition of things from that which had been described as existing in the Wiltshire barrows, and would have to be explained either as being the result of an intermixture of the two races peacefully, or as the manifestation of a tendency to variation not unparalleled even in wild tribes. The form of cranium which Retzius had called the common Celtic form was almost entirely absent in this series, as also the form of cranium known as the Borris type. Professor Rolleston also exhibited ten photographs and three skulls of the Jungle Weddo of Ceylon. There is no doubt of the genuineness of the skulls, yet one of the three was as markedly brachycephalic (the cephalic index

being eighty-one) as the others were, and, as Weddo skulls usually are, dolichocephalic. Dr. A. Campbell contributed a paper on the Looshais or Kookees inhabiting the hill tracts of Chittagong. They are described as being fairer in complexion than the people of the plains; their features resemble those of the Malays more than the Tartar-faced people of Manipore, they dry and preserve their dead, have no distinctions of caste, marriage is a civil contract, dissolvable at the will of the parties concerned, and there is no prohibition against the marriage of widows. The men live by hunting and marauding, whilst the cultivation and all the household work is left to the women; they live in log-houses, and know enough of iron-working to make spear-heads and fish-hooks. By a communication from Major Godwin-Austen on the Garos, we learn that these people occupy the extreme western end of the range of hills south of the Brahmaputra and Assam. They do not erect stone monuments, but have a similar custom of setting up posts of wood, and this in the opinion of Major Godwin-Austen has led to the use of the monoliths on the Khāsi Hills, the object of both tribes in setting them up being as a propitiation for good fortune. Mr. R. B. Shaw gave a very interesting account of some religious cairns which are seen throughout the Himalayan region, covered by propitiatory offerings in the form of sticks, to which rags, flags, horse and yaks' tails are attached. The point of most interest in connection with these cairns is the fact that they are now venerated by people of three different races and religions—the Hindus, the Buddhists, and the Mussulmans. They appear to have been originally erected to local deities, and are survivals from a more primitive form of worship which has become partially incorporated with the several religions which have been subsequently introduced into these parts, much in the same manner that in Ireland we see the veneration of holy wells and cairns associated with similar votive offerings tacitly admitted by the priesthood at the present time. Dr. Nicholas, in a paper on the ethnological relations of France and England, advocated the view of the predominance of the Celtic over Teutonic blood in the existing population of both countries, more especially the former. Mr. A. L. Lewis drew the attention of the meeting to the existence of certain curious opinions relative to the Jewish origin of the English nation, pointing out the fallacy of such views. Mr. Topley, in a remarkably original and scientifically-conceived paper on the Origin of Parish Boundaries in the South of England, showed grounds for supposing that the existing boundaries of parishes were based on some earlier and prehistoric divisions of land. The Wealden valleys being at that time covered with dense forest, were scarcely penetrable by the

earliest settlers, who would naturally select for the sites of their encampments the open dry ground near the forest, at the foot of the chalk escarpment, where wood and water were procurable. The open unwooded chalk hills on the other side would form the grazing ground for their cattle ; hence the land which became attached to each camp or settlement would only extend a short distance into the forest, but would occupy an extensive tract of country over the hills in the opposite direction. These primitive causes appear to have governed the distribution of land when it became subsequently divided into parishes. It is found that of the parishes around the Wealden border, a hundred and nineteen, conforming to the rule laid down, have their villages at the foot of the slope, close to what was formerly the margin of the forest, whilst their parishes ascend the hills at right angles to the escarpment. On the other hand, the exceptions to the rule, in which the parishes descend from the villages into the Wealden, number only six throughout the whole of this district. In the department of general anthropology, Mr. Kaines read a paper on Western Anthropologists and extra Western Communities, in which he advocated greater toleration towards savages, more especially in regard to their religions, some of which, being well adapted to their civilisation, have a better effect in keeping them in order than the religions introduced amongst them by Europeans. Mr. Wake, in a paper on the Origin of Serpent-Worship, endeavoured to prove that this worship, as a developed religious system, had its origin in Central Asia, the home of the great Scythic stock, from which the civilised races of the historic period sprang, and that the descendants of the legendary founder of that stock, the Adamites, were, in a special sense, serpent-worshippers. Mr. Harris read a paper on Theories Regarding Intellect and Instinct, which led to a lively discussion ; and Mr. Howorth contributed a paper on Darwinism, part of which has already been read before the Institute.

Among the Members of the Institute present at the meeting who took part in the discussions were Major Godwin-Austen, Dr. Beddoe, Mr. Bohn, Mr. Brabrook, Dr. A. Campbell, Mr. Charlesworth, Mr. F. Collingwood, Dr. Hooker, Mr. Howorth, Mr. Hyde Clarke, Mr. R. Dunn, Mr. Boyd Dawkins, Mr. E. Grant Duff, Dr. P. M. Duncan, Sir Walter Elliot, Mr. John Evans, Sir Duncan Gibb, Mr. G. Harris, Mr. T. Mc K. Hughes, Dr. R. King, Mr. Kaines, Mr. S. Lee, Mr. Lamprey, Mr. Lewis, Mr. Moggridge, Mr. Clements Markham, Dr. Nicholas, Dr. O'Callaghan, Captain Bedford Pim, Mr. Phené, Mr. Rudler, Professor Rolleston, Mr. A. R. Wallace, and Mr. Wake.

To Mr. F. W. Rudler the meeting was in a special manner indebted for his services as Secretary, as also for the abstracts of

several of the papers, which the authors of them had omitted to send in.

The position of the Anthropological Department in the British Association, affording, as it does, a fair criterion by which to estimate the condition of anthropology in this country, it is desirable, to profit as far as possible by the experience thus afforded, to consider any measures which may appear desirable to promote the interests of this Institution.

Amongst the changes which were this year introduced into the working of the department, the appropriation of a separate day to the discussion of each distinct section of anthropology appears worthy of attention. It was found that those members of the Association who had devoted their special and close attention to a particular branch made a point of attending on the days devoted to their subject. Owing to this cause the discussions were of a more scientific character, and the several questions submitted to the meeting were more closely argued, and with greater regard to the evidence adduced, than on previous occasions. This subject commends itself in a special manner to the notice of the Institute.

Notwithstanding the questions of local and general interest which, on the occasion of the Brighton Meeting, drew special attention to the proceedings of some of the other sections, the ample space devoted by the authorities to our department was filled during the greater part of the meeting and at times crowded, and every day of the week was fully occupied in reading the numerous papers submitted to the department. The popularity of anthropological science, and the crowded audiences which it attracted on this, as on all previous occasions of the meeting of the Association, prove beyond doubt that the Anthropological Institute of Great Britain and Ireland has only to be properly worked in order to become one of the most prosperous societies in this country.

This is not the time to discuss in detail any measures of improvement relating to our own body, but it is worthy of remark that the large attendance of women at the Association meetings of our department is evidence of the intelligent interest which is taken by the sex in anthropological studies. Amongst the numerous papers submitted to the department, only one was rejected as being unfit to be read before ladies. It is without doubt a tendency of progress so to modify the usages of society as to enable women to approach the study of nature in a scientific spirit. There can be no just reason why anthropology should oppose a barrier to this progress. Questions undoubtedly arise, though rarely, which it is not desirable the sexes should discuss in common, and for these provision should be made, but experi-

ence has proved that the total exclusion of women from our meetings is certainly a financial, if not a scientific, blunder.

Of the thirty-three papers read at the meeting, the following may be regarded as a more detailed classification of the several subjects:—Prehistoric archaeology, 13; ethnology, 8; philology, 5; descriptive ethnology, 3; general anthropology, 3; psychology, 1.

As on previous occasions, the largest proportion of the papers was devoted to prehistoric archaeology, which, being the most accessible of the inductive branches of our science, has naturally attracted a full share of the attention of anthropologists. Philology and ethnology were also fully represented. It is perhaps a subject for regret that so few papers should have been devoted to descriptive ethnology. It can hardly be necessary to draw the attention of anthropologists to the importance of more active measures for promoting this branch of study at a time when the manners and customs of uncivilised races are changing with a degree of rapidity unprecedented in the world's history, and when the continued existence of some of these races is becoming a question of only a few years. Nor can it be necessary to insist on the principle that a nation which, from its vast colonial possessions, is placed more continuously in contact with savage races than any other, has special duties imposed on it with respect to this branch of inquiry.

The comparatively feeble attempts of our own department in this direction, must be in part attributed to the insufficiently developed views entertained in some quarters, with regard to the scope and objects of our study as it is now established amongst us, under the really comprehensive title of Anthropology. At the recent meeting, it is known that a much larger amount of valuable information might have been contributed on the subject of savage races by some of the members present; whilst in the geographical department it has been customary to include this branch of our subject amongst the matters discussed. Viewed merely as a question of departments, this subject might not appear entitled to the serious attention we are disposed to claim for it. It is, however, of the first importance that the accounts of aboriginal races, presented by travellers, should be anthropologically as well as geographically investigated. On the other hand, it is equally important that in whatever body the funds necessary for promoting exploration are reposed, the department of descriptive ethnology should receive due attention, and as the means of exploration are at the present time entirely in the hands of geographers, we must be content to look to them, for the present, as our source of supply for this most important branch of our science. The difficulty in this respect will probably not be satisfactorily adjusted until anthropology has been placed on

its proper footing, as a focus for many cognate branches of study which relate to the science of man. That such must eventually be the case, there can be little doubt; and it is to this institution that we ought to look for the accomplishment of this object, when by drawing to our council the most eminent men, and thereby introducing a high standard of public spirit and an absence of schism, we may place Anthropology in a position to claim both financially and intellectually the support which, viewed as a science, it ought long since to have received from the people of this country. Meanwhile, it is satisfactory to observe that the best disposition has been shown on the part of the leading geographers to cooperate with anthropologists in the prosecution of those measures which are necessary to promote anthropological exploration, and at the conclusion of the recent meeting of the Association at Brighton, a joint committee of geographers and anthropologists was appointed to draw up general instructions for travellers, in regard to anthropological investigations.

The following is the resolution adopted by the General Committee :—

“That Colonel Lane Fox, Dr. Beddoe, Mr. Franks, Mr. Francis Galton, Mr. E. W. Brabrook, Sir John Lubbock, Bart., Sir Walter Elliot, Mr. Clements Markham, and Mr. E. B. Tyler be a committee for the purpose of preparing and publishing brief forms of instructions for travellers, ethnologists, and other anthropological observers. That Colonel Lane Fox be the secretary, and that the sum of £25 be placed at their disposal for the purpose.”

This committee has already entered upon its functions, and the two expeditions which have lately left this country for Central Africa, the one by Zanzibar, under the direction of Lieut. Cameron, R.N., and the other by the Congo River, under Lieut. Le Grandy, R.N. (although unfortunately only a few days' notice was given of their intended departure), have been furnished with detailed notes and queries on general anthropology, physical anthropology, religions, myths, customs, language, war-customs, iron manufacture, ornamentation, etc., drawn up by the members of the committee and others who are recognised as authorities in their respective branches of anthropology. Each expedition has also been furnished with a set of M. Broca's tables for estimating the colour of the skin and hair.

An additional sum of £25 was also devoted by the Association, for the purpose of continuing the exploration of the Settle Cave Committee; and Sir John Lubbock having undertaken the charge of the investigations, all possible guarantee is afforded for the success of the undertaking.

At the conclusion of the meeting an excursion was made to

Cissbury, near Worthing, where the British camp, one of the finest in the country, and the pits containing the *débris* of the manufacture of flint implements, were examined and described. The attention of anthropologists has, on a former occasion, been drawn to this locality by communications to the Ethnological Society and Society of Antiquaries.

In concluding this report, I have only to add that it has been drawn up in deference to the wishes of the council of the Institute. I cannot but feel sensible, however, that in so brief a report it has not been possible to do justice to the many valuable papers which were read at the meeting, whilst on the other hand, it is not desirable during the present necessarily limited extent of our publications, to trench more than can be avoided upon the space which our Journal should devote to the production of original matter. (Signed) A. LANE FOX.

The DIRECTOR proposed a vote of thanks to Colonel Lane Fox for his report, remarking that the Department of Anthropology had been an unusually successful one, and that much credit was due to Colonel Fox for his ability in presiding over it. The suggestions he made would have the best attention of the Council.

The following paper* was read.

On some IMPLEMENTS bearing MARKS referable to OWNERSHIP, TALLIES, and GAMBLING, from the CAVES of DORDOGNE, FRANCE. By Professor T. RUPERT JONES, F.R.S., F.G.S.

[*Abstract.*]

AMONG the implements of bone, deer-horn, and ivory found by MM. Christy and Lartet in the caves of the Dordogne district, in France, are many bearing more or less definitely designed marks, such as scorings and notches, parallel, crossing, or otherwise arranged, and pittings in a roughly quincuncial order. One specimen in particular exhibits several of these kinds of markings, whether made for a purpose, for ornament, or by trivial whittling. Professor Jones described several implements from the caves exhibiting one or more of these types of marks, and indicated their applicability to either ownership, reckoning by tally, gambling, or mere fancy work. He also suggested that herein we may have some of the earliest examples of magic signs and lucky charms such as the old Norsemen and some archaic peoples are said to have used and feared.

The particular specimen above referred to has a marginal

* Intended for publication in the "*Reliquiæ Aquitanicæ.*"

crenulation, several sets or groups of parallel notches near the edge, and on both sides quincuncial pittings.

Taking these kinds of markings in order, Professor Rupert Jones compared (first) the cut margin with some African and other specimens that had an analogous crenulation.

Secondly, a knife-like bone implement from the department of the Dordogne, exhibited, beside the edge-marks, superficial parallel scorings. These, as in the former case, may be merely tally marks of events, facts, or actions under certain circumstances. In particular he referred to a carved reindeer antler which had evidently served for a tally stick among the cave-folk of Perigord. He then referred to several specimens from the Dordogne Caves, Heathery Burn, and other sources, bones, and bone implements variously scored with numerical markings.

In the third place allusion was made to many implements from the French caves scored or gashed with lines, parallel, crosswise, or chevron-like, which were very similar to such markings as indicate ownership on the Esquimaux harpoons. All these markings were illustrated by diagrams and by reference to specimens exhibited on the table from Colonel Lane Fox's collection, which comprised African, American, Danish, Australian, and other *incised* tools and weapons.

In addition to the above, Professor Rupert Jones drew attention to rarer specimens bearing combinations of markings, whether quincuncial or otherwise, which seemed to him to be adapted to gaming purposes.

At the same time, several examples were given of instances of what may probably be imperfectly finished ornament or purposeless carving: and in some other cases the regularity was such as almost to lead to a comparison with Runic writings, such as are alluded to in Scandinavian poetry as magic charms on deadly weapons.

The number and great variety of the markings lead to the conclusion that in the vast majority of cases they were not the result of accident or chance, but of intentional workmanship, the uses for which can certainly furnish food for conjecture.

DISCUSSION.

Dr. A. CAMPBELL said he felt great diffidence in differing from the author of the paper about the markings, which he supposed to have been made for the purpose of keeping "tallies"; and this applied to the notched implements which were exhibited in illustration of Professor Jones's views. It appeared to him that the notchings must have been made for some other purpose than the temporary one of a "tally." On one of the implements—a sword or knife, which was very neatly finished—there was a continuous and regular line of small notches all

along the edge. Dr. Campbell did not think that a man was likely to notch a sword of this sort—which was probably an heirloom in his family—for the temporary purpose of keeping a “tally.” Among the people of the Himalaya mountains, with whom Dr. Campbell was familiar, the “tally” was in constant use in the occupations of ordinary life. A “sirdar” or head man of coolies kept a “tally” to enable him at the end of the day to give his master the number of men present; so in woodcutting, etc., a man will have a “tally” to show the number of logs delivered, etc., but it is not kept on a sword or other implement, but generally on a piece of stick cut in the jungle, and thrown away when the work is paid for. There are various ways of keeping a “tally”; a long notch may indicate 5, 10, or 20, so 5 notches, with a notch across, may stand for 10 or 20, as the case may be.

Mr. A. W. FRANKS stated that counterparts of the bones with singular markings described by Professor Rupert Jones, have been discovered in the cave explored by the Vicomte de Lastic near Bruniquel (Tarn et Garonne). Besides the harpoon heads with engraved lines and other ornaments, there have been found birds’ bones with scored lines. One of these, now in the British Museum, is $5\frac{1}{2}$ inches long, and has on it repetitions of a number of lines occurring in sets similarly disposed, and which might well be a kind of numeration. There is also preserved in the British Museum an object of another kind, the use of which it would not be easy to discover had it not been accompanied by a description of its meaning. It is a wooden staff, 3 feet $4\frac{3}{4}$ inches in length, surmounted by a figure, and covered with designs of the usual New Zealand pattern. Down one side are eighteen projections, of which the fifteenth is inlaid with a piece of green jade. It was obtained in New Zealand by his Excellency Sir George Grey, who states it to record the history of the Ngati-Rangitiki tribe, and to have belonged to a chief named Te-korokai, who used it to aid his memory when recounting the history of the tribe.

Mr. M. J. C. BUCKLEY said tallies or scores for reckoning are still used in the south and south-west of Ireland. He has seen “tallies” employed for marking the number of loads of potatoes, hay, corn, barrels of beer, and “firkins”* of butter, in the counties of Cork, Waterford, Tipperary, and Carlow. The system of marking is by *fives*. When the scores are equal in playing ball, the local expression in Cork is “all aboard.” The adage “it *tallies* with” something else, is from this fact of the scores on either side of the tally-stick or board being equal. The handles of spades and sticks in Cork and Waterford are often *marked* with notches as in the Australian club exhibited by Colonel Lane Fox. The expression, “I put my *criss-cross* on it,” used by the peasantry, is from this custom, so that the owner being unable to read could always claim his own stick or spade by its marks.

* A “firkin” of butter is a small oak barrel of about 28lbs. weight, in Cork. It is a corruption of the Flemish word “vierkin” (*vier*, four, and *kin*, little), or small *quarter* barrel. These firkins are all staved and hooped according to certain bye-laws of Cork and Limerick.

The manner of inserting the spade which is in use in the stony districts of the south-west of Ireland is precisely similar to the way in which the so-called bronze "celts" or hatchets of the ancient Irish were fastened to their handles. The name of "Wishmoor," near the site of the presumed lake station treated of by Lieutenant King, seems to come directly from the sound of the Keltic or Gaelic words "uischka mōre," or "large drinkable water." The river in Munster called in English the "Blackwater," is in Irish the "Abhainn-mohr" (pronounced "Avonmore") or "great water." Here is the same name and the Keltic-sounding word of "Wishmore" near to it. The words "wish," "ouish," "huish," "ish," "ey," "au," "eu," mark a spot where water ("oua" = wa) is to be found, as in this place.

The following paper was read by the author :

DISCOVERY of a FLINT IMPLEMENT STATION in WISHMOOR BOT-TOM, near SANDHURST. By Lieut. C. COOPER KING, Royal Marine Artillery. Plates xx and xxi.

THE neighbourhood of Sandhurst abounds in traces of early human occupation. The successive races that have, from time to time, inhabited this portion of Hampshire, Berkshire, and Surrey, lying between Guildford and Reading, have each and all left behind them more or less distinct evidences of their residence and existence.

At Aldershot and near Wishmoor large earthen entrenchments, the sites of stores, depôts, or camps, mark the halting places of the Roman legions, or the temporary fortifications whence they over-awed the land. Tumuli, which have been found to contain pottery and other Saxon or British remains, crown many of the isolated hills and spurs projecting from the narrow irregular ranges which intersect the district. Numerous instances again are on record of the discovery of single flakes or implements of flint, worked or bearing other marks of use, on the barren moorlands undisturbed by present cultivation; but except at and near Puttenham, a small village situated south of the chalk ridge of the "Hog's Back," there has not been any large "find" of these interesting relics of primæval races, and certainly no case in which there are such evident traces of actual work and perhaps residence, as in that to which attention is directed.

The geology of the neighbourhood is too well-known to require any very minute description, but it may be advisable to recall generally the nature of the formations there exposed. The area between Aldershot on the south, and Wokingham on the north, is occupied by the sands, clays, and gravels of the

Bagshot series, and it is to the relative positions of these materials that the situation and character of the numerous ranges of low flat-topped hills of most irregular outline, which occupy the country between the various small river lines, are mainly due. These hills are composed chiefly of the Upper Bagshot sands, and to their capping of gravel is to be attributed their resistance to the disintegrating action of rain and weather, and their consequent existence as high land. In the valleys, that of the Blackwater more particularly, the middle beds of green sands and clay make their appearance, and these extend up to the base of the more elevated land, and occupy the lower portions of its valleys and ravines.

Physically, this part of England is varied and picturesque; but owing to the presence of so much sandy unfertile soil, the cultivation is confined generally to the valleys which mark the beds of rivulets and streams; and the hill-tops, surmounted either by sombre forests of pine trees, enlivened here and there by the delicate foliage of the silver birch, or crowned by long sweeps of gorse and heather, form a rich back ground to the more varied vegetation which characterises the thickly populated area occupying the lower land following the course of the Blackwater or the Bourn.

Almost in the very heart of one of these early forests, certainly in what not many years ago was extensively and densely wooded, lies the small valley in which the flints were found. A range of low hills, the summits of which are comparatively level, crosses in a direction nearly north and south the main London-Southampton road, near the village of York Town. From this plateau, and parallel to the highway, run two long irregular spurs, at the extremities of which, where they begin to sink into the lower land, is a small hollow, bounded on three of its sides by the spurs and their subordinate projections, and on the fourth side by a low oval hill; (see *b*, map, pl. xx).

It is necessary to call particular attention to the topographical peculiarities of this hill, in order to give grounds for the theory that has been advanced with regard to the Flint Station. The contour line or level, which in the Ordnance Survey follows the outline of the two spurs at the head of this hollow or minor valley, marks its shape with sufficient distinctness; but in surveying the area the small hill presented a most singular difficulty, for in drawing this portion of the ground, and representing its form by the horizontal lines, or "hachures," commonly used in England for military drawing, it appeared as if the hill had no connection with the contour line, but was completely isolated, and so situated as to give one the impression (entirely on account of its abnormal position with reference to the levels)

that the true contour line must have, at some period, passed not through the valley, as it does now, but outside the small hill, including it in its irregular curve. It was the fact that this hill was and is a puzzle to the draughtsman, that first called attention to the physical peculiarities of the ground.

On further examination, streams were discovered running on either side of the hill, one being much larger than the other, but both proceeding from the higher level; and the hill itself was not merely steeper and higher at the extremity nearest the valley, but had a considerable deposit of superficial gravel round the sides and towards the lower end where it sinks into the plain.

It appeared as if the streamlets had worn away the hill into its present shape, thus depositing the gravel on the lower ground. The summit, again, was crowned with a thin gravel bed, and this lay on the same level as a bed of the same material, which could be traced for a short distance on the spurs enclosing the upper portion of the valley; and hence, if it be assumed that these beds formed portions of the same small gravel beach, surrounding a tiny lake, it could be readily imagined that the hill itself, now worn away on either side by the disintegrating action of the streams, was the remnant of the dam, so to speak, that pent the waters up.

The nature of the bottom of the valley gave some colour to this assumption. Its section some short distance up, towards the higher ground, consisted of—first, a little surface sand and soil, next a thin layer of a stiff yellow clay in large lenticular masses, then of the deep green sand which characterises the Middle Bagshot beds, and finally at a depth of about 3' or 4' a band of white clay. There were many fragments of wood, chiefly birch, in these clays; and in the lower white band especially, but also in the upper layers, were very numerous fragments of reeds and marshy vegetation, giving forth a silty smell. Nearer the little hill before referred to, the upper clay was covered by about 2' of sand, and had this been a veritable lake area, similar conditions would, to some extent, have obtained.

The upper part of the valley is under cultivation; but at the lower part, at the junction of the two streams which drain it, and which now unite to form one running along the northern side of the hill, is a small bare sandy space dotted with clusters of coarse grass and heather. There were traces of an attempt at cultivation at intervals, but they were of a very ill-defined character.

The first discovery of the existence of flint flakes was made by Capt. Richards at the extremity of the valley nearest the hill. Numerous flakes, well-defined and of different sizes, were found scattered closely together on the surface of the ground, and on

further examination, by excavating to the depth of about 1' or 18", a large number of flakes, with several cores, and two implements of palæolithic type, were found.

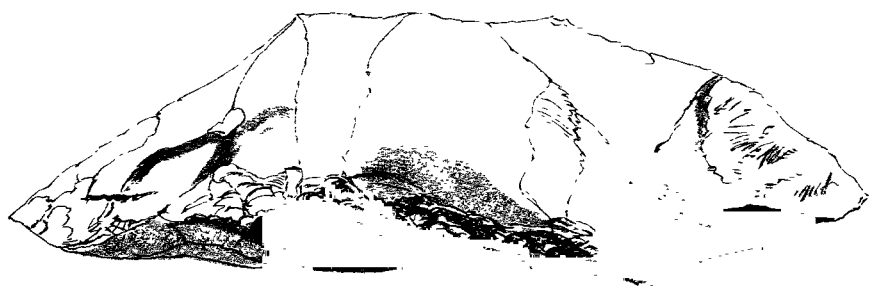
The *flakes* were very varied in shape, many being broad leaf-shaped fragments of the arrow-head size, but the majority were long simple flakes of the usual character, with well-defined lobes of percussion. None seemed to have been worked into small implements, though a number bore marks of usage as side-scrapers. By far the larger number were, of course, merely rough outsiders, but the minute fragments produced in knapping larger flints were extremely numerous.

The *implements*, though undoubtedly of the same age, and made somewhat in the same way, differed materially in their character. One was formed from a long cylindrical flint, one end of which had been left smooth and untouched to form a handle, but the other had been carefully knapped, and the point of a shoe-shaped instrument produced, the lower side of which was flat, and the upper surface somewhat ridged or rounded. The other specimen (pl. xxi) is completely finished from a bright yellow-tinted flint, and is of an oval or shoe-shaped form. The lower surface is nearly flat, this effect being produced by the removal of flakes running along its length; and on the upper side the flakes have been struck from a hog-backed ridge; with the ends symmetrically rounded off. On each side are marks of wear, which may have been caused by use as a kind of heavy scraper, or perhaps from being attached by withes or ligatures to a rod, in much the same way as the blacksmith holds his chisel. The want of wear at the extremities militates against the theory that it was actually used in this manner, but it is possible that it may be the relic of a larger implement which had been worn down and then re-knapped for further service. This may have been the cause of its rejection, as it may not in its altered state have satisfied the workman and been therefore cast aside.

It seems very probable that implements were often thus re-fashioned, for many flakes with clean cut sharp edges were found, the upper surface of which bore the marks of the removal of many chips; and from the small size of the flake these could scarcely have been struck off when in its present shape without great difficulty. If, however, it originally formed part of the surface of a larger implement, it may have been removed during the process of improving or re-shaping the older tool.

The *cores* were numerous and frequently very small, evidently having been merely used to produce side-scrapers.

The area in which this set of relics occurred was very limited, though in it they were numerous; but starting from the point



TWO VIEWS
OF A
FLINT IMPLEMENT FROM WISHMOOR SURREY.
Var. Size.

where they seemed most abundant in any diverging direction the traces were soon lost, and it was evident that the chips were almost entirely confined to one spot. Not even a chip, barely a single pebble, could be found in the sand beyond this apparent centre of work; and though a most careful search was made, it was remarkable how singularly rare, comparatively, were even fragments of flint or gravel, and for some time it was considered that the area had been worked out.

A short time after this conclusion had been arrived at, and at a point about a hundred yards further up the valley, at the beginning of the cultivation, there was again a discovery of flakes, but these, though very definite in shape, were generally broken in two, and a quantity of fragments, of a triangular section, showed how the plough and spade had been the means of destroying many beautifully definite specimens. Here, again, the surface discovery was very limited, and even that eventually made below the surface. Beyond a small, nearly circular space there was not a single flake, though the ground was most diligently examined; but on excavating, flakes and a large number of cores were immediately found either resting on the upper layer of clay, or between it and the surface. The larger number, however, rested on or near this yellow clay. As in the previous instance, the sands and clay were singularly free from gravel or stones, and nearly every fragment of flint bore traces of intentional fracture.

Going still further up the valley for about one hundred yards, and in a portion of land that had been much longer under cultivation, and hence much more disturbed, two flakes were found, and a magnificent core of black flint, from which long well-shaped flakes had been struck on all sides. As it was difficult to make a minute search, no further discovery was effected, but the surface was carefully searched towards the other station without finding a single fragment of flint that had marks of intentional fracture.

There was but one more relic found, and that was a very perfect circular scraper about $2\frac{1}{2}$ or 3 inches in diameter, much worn at the edges, and with nearly flat sides. It was a completely isolated discovery, nothing being found near it: and it lay on the surface of the steeper slope of the small oval hill that closes the valley.

In considering the history of the valley with the light thrown on it by the singular isolation of the groups of flakes, and further by the peculiar nature both of its form and of its bottom, it becomes a most interesting problem to account for its existence in its present shape.

But a short distance south of it, and parallel to the main

London road, are numerous deep ruts, tolerably regular, apparently converging on the ford of the Blackwater, situated close to the bridge, at the village of that name. The stream, though narrow, has a very soft muddy bottom with low rotten banks, and a depth of water varying from 3 to 6 feet, and hence it is possible that even in early times communication between the sides of the river was effected at the fords which exist at several points along its course, and that, as Professor Rupert Jones has suggested, these tracks or ruts may be the traces of the old roads.

The same considerations which lead to the selection of certain lines as arteries of traffic apply with equal force at all periods of history. Thus aboriginal races would choose the easiest or most direct route between points occupied as settlements, and as these became more fully inhabited and took the character of towns or cities the old routes would still probably be utilised, even if more numerous roads were constructed. It is perfectly allowable, therefore, to make such an assumption. The ford doubtless existed at very early periods, and would form a natural point of passage; and even as in the present day the principal highway traverses the stream at Blackwater, so in all probability the nomad tribes of early days chose this point for the same purpose, and their tracks through the forest-land may be indicated by the ruts in question.

If such be the case, the "Flint Station" we have examined might well be one of the halting-places of an aboriginal race. Not far from the line of inter-communication, concealed both by forests and by the undulations of the ground, in the immediate neighbourhood of that great desideratum—a constant supply of fresh water—travellers would have been safe from observation in their camp and at the same time be near the road. But in this case the question naturally arises, Why was not the slope of a hill or even a more secluded valley, of which there are many within a short distance, chosen for a village or a camp? The low-lying ground of the valley must have been at least more damp and marshy than it is now, and even for the slight security from observation afforded by its sheltered position, it is scarcely likely that such a spot would be selected as a resting-place. Human nature probably varies little from time to time, and even the flint-knappers of olden days were doubtless not inattentive to personal comfort.

One point of interest may well be mentioned here with regard to the flint from which the implements were made. The material does not seem to be of local production. The gravel pits near rarely produce flints of such close texture and size as those which yielded the fragments discovered; and it is

further a great question whether the flints from the gravels are susceptible of being readily worked. Had they been collected from the neighbourhood there would have been more untouched specimens lying about, for the short distance from which they might be obtained would admit of the transport of a large number of stones that appeared externally suited for working; and of these the best only would be used, leaving untouched those that, on closer examination, were useless. Hence it may be reasonably advanced that either carefully selected flints were habitually carried by the workers to be converted into implements at the camps, or that implements blunted or broken by use were re-converted at these places. The writer has in vain endeavoured to produce flakes from the local flints; and has failed because of their irregular texture: freshly dry flints from the Chalk are, however, very susceptible of knapping.

Let us turn again to the consideration of the valley and examine the nature of the terrain. A constantly flowing stream, the presence of gravel round the lip, so to speak, of the hollow, the singular position and shape of the small hill, must all have a meaning if we could read it. From the presence of the flakes on or near the clay, it follows that this substance was uncovered, or nearly so, when the flakes, etc., were deposited. The isolation of the groups, and their distance apart, should also be considered; for if the valley had been in its present condition when occupied by the flint-knappers, one would have expected to find the remains more generally distributed over its surface.

Viewing these conditions, a rather startling theory, but one at the same time which seems to satisfy the requirements of the case, has been advanced. May not this have been a small lake-area at the period of its occupation by an aboriginal race, and hence may not the small groups of flints be the sole remnants of very small lake-dwellings? It may be justly remarked, in opposition to this theory, that there are no traces of piles, stones, or even fascines, but these may have been removed or destroyed as the small hill wore away. A similar result would have occurred had the substructure been either a floating raft or a mere pile of bundles of brushwood; and in this case, moreover, the materials would have been washed away or have dropped into decay.

Protection from a sudden assault, and concealment from passers by, would both be gained by establishing the temporary settlement within the lake-area, and communication could have been effected with the shore by raft, pier, or coracle. Far-fetched as such an assumption appears, it is difficult to account in any other way for the presence of flint implements in a marshy valley of such a peculiar character as that referred to. The area

has not been yet thoroughly examined, for the group of flakes nearest the hill is the only one that has been apparently worked out; but even with the scanty information that has been gathered with reference to it, sufficient has been discovered to render the "Flint Station" near Sandhurst of considerable interest, and one that may at a future time tend to throw further light on the habits and customs of those primeval races of whose history so little is known, and the traces of whose existence are often so obscure.

DISCUSSION.

Professor RUPERT JONES had much pleasure in corroborating Lieutenant King's account of the topographical features of the finding-place of the flint implements, and the condition of the valley bottom where they were embedded. Though now drained and partially cultivated, this portion of Wishmoor Bottom must at no distant period have been a marsh and probably a lake. In some cases, perhaps, a local sand flat may have existed through which the stone implements may have sunk after having been left on its surface. Professor Jones intimated that the locality was well worthy of a visit, and the scientific visitors would be welcomed by Lieutenant King and himself.

The Director read a letter from the secretary of the Society of Antiquaries, inviting the members of the Institute to hear a paper by the Rev. W. C. Lukis, of that Society, on the 9th. The thanks of the members present were voted to the Council of that Society, and the meeting separated.

DECEMBER 17TH, 1872.

DR. R. S. CHARNOCK, *Vice-President, in the Chair.*

THE Minutes of the previous Meeting were read and confirmed.

The Rev. THOMAS FELTON FALKNER, B.A., was elected a Member and a Local Secretary for Colombo, Ceylon.

The following presents were announced, and the thanks of the meeting voted to the respective donors:—

FOR THE LIBRARY.

From the EDITOR.—The Spiritualist, Nos. 1, 2, 3, New Series.

From the EDITOR.—The Food Journal for December, 1872.

From the SOCIETY.—Proceedings of the Royal Geographical Society, vol. xvi, No. 3. President's Address, ditto, 1872.

From the EDITOR.—Mittheilungen der Anthropologischen Gesellschaft in Wien, 1872.

From the SOCIETY.—Jahrbuch der K. K. Geologischen Reichsanstalt, vol. xxii, No. 3, 1872; Verhandlungen ditto, 1872.

From the EDITOR.—Nature (to date).

From the EDITOR.—La Revue Scientifique, Nos. 22-26.

The following paper was read by the author :

THE ORIGIN OF SERPENT-WORSHIP. By C. STANILAND WAKE, M.A.I.

THE subject proposed to be discussed in the present paper is one of the most fascinating that can engage the attention of anthropologists. It is remarkable, however, that although so much has been written in relation to it, we are still almost in the dark as to the origin of the superstition in question. The student of mythology knows that certain ideas were associated by the peoples of antiquity with the serpent, and that it was the favourite symbol of particular deities; but why that animal rather than any other was chosen for the purpose is yet uncertain. The facts being well known, however, I shall dwell on them only so far as may be necessary to support the conclusions based upon them.

We are indebted to Mr. Fergusson for bringing together a large array of facts, showing the extraordinary range which serpent worship had among ancient nations. It is true that he supposes it not to have been adopted by any nation belonging to the Semitic or Aryan stock; the serpent-worship of India and Greece originating, as he believes, with older peoples. However this may be, the superstition was certainly not unknown to either Aryans or Semites. The brazen serpent of the Hebrew exodus was destroyed in the reign of Hezekiah, owing to the idolatry to which it gave rise. In the mythology of the Chaldeans, from whom the Assyrians seem to have sprung, the serpent occupied a most important position. Among the allied Phœnicians and Egyptians it was one of the most divine symbols. In Greece, Hercules was said "to have been the progenitor of the whole race of serpent-worshipping Scythians, through his intercourse with the serpent Echidna"; and when Minerva planted the sacred olive on the Acropolis of Athens, she placed it under the care of the serpent-deity Erechthonios. As to the Latins, Mr. Fergusson remarks that "Ovid's 'Metamorphoses' are full of passages referring to the important part which the serpent performed in all the traditions of classic

mythology." The superstitions connected with that animal are supposed not to have existed among the ancient Gauls and Germans; but this is extremely improbable, considering that it appears to have been known to the British Celts and to the Gothic inhabitants of Scandinavia. In eastern Europe there is no doubt that the serpent superstition was anciently prevalent, and Mr. Fergusson refers to evidence proving that "both trees and serpents were worshipped by the peasantry in Esthonia and Finland within the limits of the present century, and even with all the characteristics possessed by the old faith when we first become acquainted with it."

The serpent entered largely into the mythology of the ancient Persians, as it does into that of the Hindus. In India it is associated with both Sivaism and Vishnuism, although its actual worship perhaps belonged rather to the aboriginal tribes among whom Buddhism is thought by recent writers to have originated. The modern home of the superstition, however, is western Africa, where the serpent is not merely considered sacred, but is actually worshipped as divine. On the other side of the Indian Ocean traces of the same superstition are met with among the peoples of the Indian islands and of Polynesia, and also in China. The evidences of serpent-worship on the American continent have long engaged the attention of archaeologists, who have found it to be almost universal, under one form or another, among the aboriginal tribes. That animal was sculptured on the temples of Mexico and Peru, and its form is said by Mr. Squier to be of frequent occurrence among the mounds of Wisconsin. The most remarkable of the symbolic earthworks of North America is the great serpent mound of Adam's county, Ohio, the convolutions of which extend to a length of 1000 feet. At the Edinburgh meeting of the British Association, in 1871, Mr. Phené gave an account of his discovery in Argyllshire of a similar mound several hundred feet long, and about fifteen feet high by thirty feet broad, tapering gradually to the tail, the head being surmounted by a circular cairn, which he supposes to answer to the solar disc above the head of the Egyptian uræus, the position of which, with head erect, answers to the form of the Oban serpent-mound. This discovery is of great interest, and its author is probably justified in assuming that the mound was connected with serpent-worship. I may remark, in evidence of the existence of such structures in other parts of the old world, that the hero of one of the Yaçnas of the Zend Avesta is made to rest on what he thinks is a bank, but which he finds to be a great green snake, doubtless a serpent mound. Another ancient reference to these structures is made by Iphicrates, who, according to Bryant, "related that

in Mauritania there were dragons of such extent, that grass grew upon their backs."

Let us now see what ideas have been associated with the serpent by various peoples. Mr. Fergusson mentions the curious fact that "the chief characteristic of the serpents throughout the East in all ages seems to have been their power over the wind and rain." According to Colonel Meadows Taylor, in the Indian Deccan, at the present day, offerings are made to the village divinities (of whom the nâg, or snake, is always one) at spring time and harvest for rain or fine weather, and also in time of cholera or other diseases or pestilence. So, among the Chinese, the dragon is regarded as the giver of rain, and in time of drought offerings are made to it. In the spring and fall of the year it is one of the objects worshipped, by command of the Emperor, by certain mandarins. The Chinese notion of the serpent or dragon dwelling above the clouds in spring to give rain reminds us of the Aryan myth of Vritra, or Ahi, the throttling snake, or dragon with three heads, who hides away the rain-clouds, but who is slain by Indra, the beneficent giver of rain. "Whenever," says Mr. Cox, "the rain is shut up in the clouds, the dark power is in revolt against Dyaus and Indra. In the rumblings of the thunder, while the drought still sucks out the life of the earth, are heard the mutterings of their hateful enemy. In the lightning flashes which precede the outburst of the pent-up waters are seen the irresistible spears of the god, who is attacking the throttling serpent in his den; and in the serene heaven which shone out when the deluging clouds are passed away, men beheld the face of the mighty deity who was their friend." Mr. Cox elsewhere remarks that Vritra, "the enemy of Indra, reappears in all the dragons, snakes, or worms slain by all the heroes of Aryan mythology."

Whether the great serpent be the giver or the storer of rain, the Aryans, like all eastern peoples, suppose it to have power over the clouds. This, however, is only one of its attributes. It is thought to have power over the wind as well as the rain, and this also is confirmed by reference to Aryan mythology. Mr. Cox has well shown that Hermes is "the air in motion, or wind, varying in degree from the soft breath of a summer breeze to the rage of the growing hurricane." In these more violent moods he is represented by the Maruts, the "crushers" or "grinders," who are also the children of Rudra, the "Father of the Winds," and himself the "wielder of the thunderbolt" and the "mightiest of the mighty." Rudra is also "the robber, the cheat, the deceiver, the master thief," and in this character both he and Hermes agree with the cloud-thief Vritra.

Notwithstanding the fact that in the Mahâbharâta, Rudra,

like Hercules, is described as the "destroyer of serpents," he is in the same poem identified with Mahadeva, and hence he is evidently the same as Siva, who has the title of King of Serpents. The primitive character of Siva, as the Vedic Rudra, is now almost lost, but the identity of the two deities may be supported by reference to an incident related in the myth of Hermes and Apollo. It is said that, in return for the sweet-sounding lyre, Apollo gave to Hermes the magical "three-leaved rod of wealth and happiness." Sometimes this rod was entwined with serpents instead of fillets, and there is no difficulty in recognising in it the well-known emblem of Siva, which also is sometimes encircled by serpents. It can be shown that the Hindu deity is a form of Saturn, one of the Semitic names for whom was Set or Seth. It was the serpent-symbol of this God* which was said to have been elevated in the wilderness for the healing of the people bitten by serpents, and curiously enough Rudra (Siva) was called not only the *bountiful*, the *strong*, but the *healer*. The later Egyptian title of the god Set was Typhon, of whom Mr. Bréal says that "Typhon is the monster who obscures the heaven, a sort of Greek Vritra." The myth of Indra and Vritra is reproduced in Latin mythology as that of Hercules and Cacus. Cacus also is analogous to Typhon, and as the former is supposed to have taken his name from, or given it to, a certain wind which had the power of clothing itself with clouds, so the latter bore the same name as a very destructive wind which was much dreaded by the Phœnicians and Egyptians. Moreover, the name Typhon was given by the Egyptians to anything tempestuous, and hence to the ocean; and in Hebrew the allied word "Suph" denotes a "whirlwind." There is another point of contact, however, between Siva and the god Set or Typhon, who was known to the Egyptians also as the serpent Aphôphis, or the giant. An ancient writer states that one of the names of El, or Chronos, was Typhon, and the serpent and pillar symbols of the Phœnician deity confirm the identification between Set or Saturn, and the Siva of the Hindu Pantheon.

One of the leading ideas connected with the serpent was, as we have seen, its power over the rain, but another equally influential was its connection with health. Mr. Fergusson remarks that "when we first meet with serpent-worship, either in the wilderness of Sinai, the groves of Epidaurus, or in the Sarmatian huts, the serpent is always the Agathodæmon, the bringer of health and good fortune."† The Agathodæmon, which in

* Theodoret did not distinguish between an Egyptian sect called *Sethians* and the Gnostic *Ophites* or serpent-worshippers.

† The heavenly serpent, *Danh*, of the Dahomans, is said by Captain Burton to be the god of wealth. "His earthly representative is esteemed the

ancient Egypt presided over the affairs of men as the guardian spirit of their houses,* was the Asp of Ranno, the snake-headed goddess who is represented as nursing the young princes. That the idea of health was intimately associated with the serpent is shown by the crown formed of the asp, or sacred *Thermuthis*, having been given particularly to Isis, a goddess of life and healing. It was also the symbol of other deities with the like attributes. Thus on a papyri it encircles the figure of Harpocrates, who was identified with the serpent god Æsculapius; while not only was a great serpent kept alive in the temple of Serapis, but on later monuments this deity is represented by a great serpent, with or without a human head. Sanchoniathon says of that animal—"It is long-lived, and has the quality not only of putting off its old age and assuming a second youth, but of receiving at the same time an augmentation of its size and strength." The serpent, therefore, was a fit emblem of Rudra "the healer"; and the gift which Apollo presented to Mercury could be entwined by no more appropriate object than the animal which was supposed to be able to give the health without which even Mercury's magic-staff could not confer wealth and happiness. It is remarkable that a Moslem saint of Upper Egypt is still thought to appear under the form of a serpent, and to cure the diseases which afflict the pilgrims to his shrine.

Ramahavaly, one of the four national idols of the Madagasses, bears a curious analogy to the serpent gods of wisdom and healing. One of his titles is *Rabiby*, signifying "animal," and denoting "the god of beasts"; and his emissaries are the serpents which abide in Madagascar, and are looked upon with superstitious fear by the inhabitants. Ramahavaly is, moreover, regarded as the Physician of Imerina, and is thought to preserve from, or expel, epidemic diseases. Mr. Ellis says that he is sometimes described "as god, sacred, powerful, and almighty; who kills and makes alive; who heals the sick, and prevents diseases and pestilence; who can cause thunder and lightning to strike their victims or prevent their fatality; can cause rain in abundance when wanted, or can withhold it so as to ruin the crops of rice. He is also celebrated for his knowledge of the past and future, and for his capacity of discovering whatever is hidden or concealed."

It is probable that the association with the serpent of the idea of healing arose from the still earlier recognition of that animal

supreme bliss and general good." The Slavonian Morlacchi still consider that the sight of a snake crossing the road is an omen of good fortune.—Wilkinson's "Dalmatia and Montenegro," vol. ii, p. 160.

* Mr. Lane states that each quarter of Cairo is supposed to have its guardian genius, or agatho-dæmon, in the form of a serpent.—Vol. i, p. 289.

as a symbol of life. I have already referred to the representations in the Egyptian temples of the young princes being nursed by a woman having the head of an asp. It is interesting to find that in India at the present day serpent-worship is expressly resorted to on behalf of children, and "the first hair of a child which is shaved off when it has passed teething and other infantine ailments is frequently dedicated to a serpent." This animal in both cases is treated as the guardian of life, and therefore the crown given to Egyptian sovereigns and divinities was very properly formed of the asp of Ranno. Another snake-headed Egyptian goddess has the name *Hih* or *Hoh*, and Sir Gardner Wilkinson mentions that the Coptic word *Hof* signifies the viper, analogous to the *hyc* of the Arabs. The Arabic word *hiya*, indeed, means both life and a serpent. This connection is supported by the association, already pointed out, between the serpent and the gods of the life-giving wind, and by the fact that these also possess the pillar symbol of life. This belongs as well to Siva the destroyer, the preserver, and the creator, as to Set or Saturn, to Thoth-Hermes, and El or Chronos. Both the serpent and the pillar were assigned also to many of the personifications of the sun, the deified source of earthly life. Probably the well-known figure representing the serpent with its tail in its mouth, was intended to symbolise endless life rather than eternity, an idea which does not appear to have been associated with that animal by the Egyptians. Agreeably with this view, Horapollon affirms that Kneph-Agathodæmon denoted immortality.

One of the best-known attributes of the serpent is wisdom. The Hebrew tradition of the fall speaks of that animal as the most subtle of the beasts of the field; and the founder of Christianity tells his disciples to be as wise as serpents, though as harmless as doves. Among the ancients the serpent was consulted as an oracle, and Maury points out that it played an important part in the life of several celebrated Greek diviners in connection with the knowledge of the language of birds, which many of the ancients believed to be the souls of the dead. The serpent was associated with Apollo and Athené, the Grecian deities of wisdom, as well as with the Egyptian Kneph,* the ram-headed god from whom the Gnostics are sometimes said to have derived their idea of the *Sophia*. This personification of divine wisdom is undoubtedly represented on Gnostic gems under the form of the serpent. In Hindu mythology there is the same association between that animal and the idea of wisdom. Siva, as Sambhu, is the patron of the Brâh-

* Warburton supposes that the worship of the One God Kneph, was changed into that of the dragon or winged-serpent Kauphis.

manic order, and, as shown by his being three-eyed, is essentially a god possessing high intellectual attributes. Vishnu also is a god of wisdom, but of the somewhat lower type which is distinctive of the worshippers of truth under its feminine aspect. The connection between wisdom and the serpent is best seen, however, in the Hindu legends as to the Nagas. Mr. Fergusson remarks that "the Naga appears everywhere in Vaishnava tradition. There is no more common representation of Vishnu* than as reposing on the Seshha, the celestial seven-headed snake, contemplating the creation of the world. It was by his assistance that the ocean was churned and Amrita produced. He everywhere spreads his protecting hood over the god or his avatars; and in all instances it is the seven-headed heavenly Naga, not the earthly cobra of Siva." The former animal, no doubt, is especially symbolical of wisdom, and it is probably owing to his intellectual attributes rather than to his destructive or creative power that Siva is sometimes styled the King of Serpents. The Upanishads refer to the science of serpents, by which is meant the wisdom of the mysterious Nagas who, according to Buddhist legend, reside under Mount Méru, and in the waters of the terrestrial world. One of the sacred books of the Tibetan Buddhists is fabled to have been received from the Nagas, who, says Schlagentweit, are "fabulous creatures of the nature of serpents, who occupy a place among the beings superior to man, and are regarded as protectors of the law of the Buddha. To these spiritual beings Sâkyamuni is said to have taught a more philosophical religious system than to men, who were not sufficiently advanced to understand it at the time of his appearance." So far as this has any historical basis, it can mean only that Gautama taught his most secret doctrines to the Nagas, or aboriginal serpent-worshippers, who were the first to accept his teaching, and whose religious ideas had probably much in common with those of Gautama himself. Mr. Fergusson refers to the fact that a king of the Naga race was reigning in Magadha when Buddha was born in 623 B.C.; and he adds that the dissemination of his religion "is wholly due to the accident of its having been adopted by the low caste kings of Magadha, and to its having been elevated by one of them to the rank of the religion of the state." It would appear, indeed, that according to a Hindu legend, Gautama himself had a serpent lineage.

The "serpent-science" of Hindu legend has a curious parallel in Phœnician mythology. The invention of the Phœnician written character is referred to the god Taaut or Thoht, whose snake-symbol bears his name Têt, and is used to represent the ninth letter of the alphabet (*tîtu*), which in the oldest Phœnician

* Vishnu is often identified with Kneph.

character has the form of the snake curling itself up. Philo thus explains the form of the letter *theta*, and that the god from whom it took its name was designated by the Egyptians as a serpent curled up, with its head turned inwards. Philo adds that the letters of the Phœnician alphabet "are those formed by means of serpents; afterwards, when they built temples, they assigned them a place in the adytums, instituted various ceremonies and solemnities in honour of them, and adored them as the supreme gods, the rulers of the universe." Bunsen thinks the sense of this passage is "that the forms and movements of serpents were employed in the invention of the oldest letters, which represent the gods." He says, however, that "the alphabet does not tally at all with the Phœnician names," and the explanation given by Philo, although curious as showing the ideas anciently associated with the serpent, is reliable only so far as it confirms the connection between that animal and the inventor of the written characters. According to another tradition, the ancient theology of Egypt was said to have been given by the Agathodæmon, who was the benefactor of all mankind.

The account given of the serpent by Sanchoniathon, as cited by Eusebius, is worth repetition as showing the peculiar notions anciently current in connection with that animal. The Phœnician writer says: "Taautus first attributed something of the divine nature to the serpent and the serpent tribe, in which he was followed by the Phœnicians and Egyptians; for this animal was esteemed by him to be the most inspired of all the reptiles, and of a fiery nature, inasmuch as it exhibits an incredible celerity, moving by its spirit without either hands or feet, or any of those external members by which other animals effect their motion, and in its progress it assumes a variety of forms, moving in a spiral course, and darting forwards with whatever degree of swiftness it pleases. It is, moreover, long-lived, and has the quality not only of putting off its old age, and assuming a second youth, but of receiving at the same time an augmentation of its size and strength, and when it has fulfilled the appointed measure of its existence it consumes itself, as Taautus has laid down in the sacred books; upon which account this animal is introduced in the sacred rites and mysteries." In India at the present day some Brahmans always keep the skin of a nâg, or snake, in one of their sacred books, probably from some idea connected with the casting by the serpent of its skin referred to in the preceding passage.

We have now seen that the serpent was anciently the symbol of wisdom, life, and healing, and also that it was thought to have power over the wind and rain. This last attribute is easily understood when the importance of rain in the east is

considered, and the ideas associated by the ancients with the air and moisture are remembered. The Hebrew tradition which speaks of the creative spirit moving over the face of the waters embodies those ideas, according to which the water contains the elements of life and the wind is the vivifying principle. The attribute of wisdom cannot so easily be connected with that of life. The power of healing is certainly an evidence of the possession of wisdom,* but as it is only one phase of it, probably the latter attribute was antecedent to the former, or at least it may have had an independent origin. What this origin was may perhaps be explained by reference to certain other ideas very generally entertained in relation to the serpent. Among various African tribes this animal is viewed with great veneration, under the belief that it is often the re-embodiment of a deceased ancestor. This notion appears to be prevalent also among the Hindus, who, like the Kafirs, will never kill a serpent, although it is usually regarded with more dislike than veneration. Mr. Squier remarks that "many of the North American tribes entertain a superstitious regard for serpents, and particularly for the rattlesnake. Though always avoiding they never destroy it, 'lest,' says Barham, 'the spirit of the reptile should excite its kindred to revenge.'" Mr. Squier adds that, "according to Adair, this fear was not unmingled with veneration. Charlevoix states that the Natchez had the figure of a rattlesnake, carved from wood, placed among other objects upon the altar of their temple, to which they paid great honour. Heckwelder relates that the Linni Linape called the rattlesnake 'grandfather,' and would on no account allow it to be destroyed. Henry states that the Indians around Lake Huron had a similar superstition, and also designated the rattlesnake as their 'grandfather.' He also mentions instances in which offerings of tobacco were made to it, and its parental care solicited for the party performing the sacrifice. Carver also mentions an instance of similar regard on the part of a Menominee Indian, who carried a rattlesnake constantly with him, 'treating it as a deity, and calling it his great father.'"†

The most curious notion, however, is that of the Mexicans, who always represented the first woman, whose name was translated by the old Spanish writers "the woman of our flesh," as accompanied by a great male serpent. This serpent is the sun-god *Tonacatl-coultl*, the principal deity of the Mexican pantheon,

* According to Gaelic and Germanic folklore, the white snake when boiled has the faculty of conferring medicinal wisdom. The white snake is venerated as the king of serpents by the Scots, and by certain Arab tribes, and it would appear also by the

† The snake is one of the Indian tribal *totems*

and his female companion, the goddess mother of mankind, has the title *cihua-cohuatl*, which signifies "woman of the serpent." With the Peruvians, also, the principal deity was the serpent-sun, whose wife, the female serpent, gave birth to a boy and a girl from whom all mankind were said to be descended. It is remarkable that the serpent origin thus ascribed to the human race is not confined to the aborigines of America. According to Herodotus, the primeval mother of the Scyths was a monster, half woman and half serpent. This reminds us of the serpent parentage ascribed to various personages of classical antiquity. Among the Semites, Zohak, the traditional Arabian conqueror of Central Asia, is represented as having two snakes growing at his back; and Mr. Bruce mentions that the line of the Abyssinian kings begins with "The Serpent," *Arwe*, who is said to have reigned at Axum for 400 years, showing that the royal descent was traced from this animal. From the position assigned to the dragon in China, it probably was formerly thought to stand in a similar relation to the Emperor, of whom it is the special symbol.

The facts cited prove that the serpent superstition is intimately connected with ancestor worship, probably originating among uncultured tribes who, struck by the noiseless movement and the activity of the serpent, combined with its peculiar gaze and marvellous power of fascination, viewed it as a spirit embodiment. As such, it would be supposed to have the superior wisdom and power ascribed to the denizens of the invisible world, and from this would originate also the ascription to it of the power over life and health, and over the moisture on which those benefits are dependent. The serpent-spirit may, however, have made its appearance for a good or a bad purpose, to confer a benefit or to inflict punishment for the misdeeds of the living. The notion of there being good and evil serpent-spirits would thus naturally arise. Among ancestor-worshipping peoples, however, the serpent would be viewed as a good being who busied himself about the interests of the tribe to which he had once belonged. When the simple idea of a spirit ancestor was transformed into that of the Great Spirit, the father of the race, the attributes of the serpent would be enlarged. The common ancestor would be relegated to the heavens, and that which was necessary to the life and well-being of his people would be supposed to be under his care. Hence the great serpent was thought to have power over the rain and the hurricane, with the latter of which he was probably often identified.

When the serpent was thus transferred to the atmosphere, and the superstition lost its simple character as a phase of ancestor worship, its most natural association would be with the solar

cult. It is not surprising, therefore, to find that *Quetzalcoatl*, the divine benefactor of the Mexicans, was an incarnation of the serpent-sun *Tonacatlcoatl*, who thus became the great father, as the female serpent *Cihuacoatl* was the great mother, of the human race. It is an interesting enquiry how far the sun-gods of other peoples partook of this double character. Bunsen has a remarkable passage bearing on the serpent nature of those deities. He says that "Esmun-Esculapius is strictly a Phœnician god. He was especially worshipped at Berytus. At Carthage he was called the highest god, together with Astarte and Hercules. At Babylon, according to the above genealogy of Bel, Apollo corresponded to him. As the snake-god he must actually be Hermes, in Phœnician Têt, Taautes. . . . In an earlier stage of kosmogonical consciousness he is Agathodæmon-Sôs, whom Lepsius has shown to be the third god in the first order of the Egyptian Pantheon." The serpent deity who was thus known under so many forms was none other than the sun-god Set or Saturn, who has already been identified with Siva and other deities having the attributes usually ascribed to the serpent. Bunsen asserts that Set is common to all the Semites and Chaldæans, as he was to the Egyptians, but that "his supposed identity with Saturn is not so old as his identity with the sun-god, as Sirius (Sôthis), because the sun has the greatest power when it is in Sirius." Elsewhere the same writer says that "the Oriento-Egyptian conception of Typhon-Set was that of a drying-up parching heat. Set is considered as the sun-god when he has reached his zenith, the god of the summer sun."

The solar character of the serpent-god appears therefore to be placed beyond doubt. But what was the relation in which he was supposed to stand to the human race? Bunsen, to whose labours I am so much indebted, remarks that Seth "appears gradually among the Semites as the background of their religious consciousness," and not merely was he "the primitive god of northern Egypt and Palestine," but his genealogy as "the Seth of Genesis, the father of Enoch (the man), must be considered as originally running parallel with that derived from the Elohim, Adam's father." Seth is thus the divine ancestor of the Semites, a character in which, but in relation to other races, the solar deities generally agree with him. The kings and priests of ancient peoples claimed this divine origin, and "children of the sun" was the title of the members of the sacred caste. When the actual ancestral character of the deity is hidden he is regarded as "the father of his people" and their divine benefactor. He is the introducer of agriculture, the inventor of arts and sciences, and the civilizer of mankind; "characteristics," says Faber, "which every nation ascribed to the first of their

gods or the oldest of their kings." This was true of Thoth, Saturn, and other analogous deities, and the Adam of Hebrew tradition was the father of agriculture, as his representative Noah was the introducer of the vine.

Elsewhere I have endeavoured to show that the name of the great ancestor of Hebrew tradition has been preserved by certain peoples who may thus be classed together as Adamites. He appears, indeed, to be the recognised legendary ancestor of the members of that division of mankind whose primeval home we can scarcely doubt was in Central Asia, answering in this respect to the Seth of the Semites. According to the tradition, however, as handed down to us by the Hebrews, Seth himself was the son of Adam. From this, it would seem to follow that, as Seth was the serpent sun-god (the Agathodæmon), the legendary ancestor of the Adamites must himself have partaken of the same character. Strange as this idea may appear it is not without warrant. We have already seen that the Mexicans ascribed that nature to *Tonacatl-coatl* and his wife, the mother of mankind, and that a similar notion was entertained by various peoples of the old world. The Chaldaean god *Héa* who, as the "teacher of mankind," and the "lord of understanding," answers exactly to the divine benefactor of the race before referred to, was "figured by the great serpent which occupies so conspicuous a place among the symbols of the gods on the black stones recording Babylonian benefactions." The name of the god is connected with the Arabic *Hiya*, which signifies a serpent as well as life, and Sir Henry Rawlinson says that "there are very strong grounds indeed for connecting him with the serpent of scripture, and with the Paradaical traditions of the tree of knowledge and the tree of life." The god *Héa* was, therefore, the serpent revealer of knowledge, answering in some respects to the serpent of the fall. He was, however, the Agathodæmon, and in the earlier form of the legend doubtless answered to the great human ancestor himself. It is curious that, according to Rabbinical tradition, Cain was the son, not of Adam, but of the serpent-spirit Asmodeus, who is the same as the Persian Ahri-man, "the great serpent with two feet." In the name of Eve, the mother of mankind, we have, indeed, direct reference to the supposed serpent-nature of our first parents. Clemens Alexandrinus long since remarked that the name *Heria*, aspirated, signifies a female serpent. The name Eve is evidently connected with the same Arabic root as that which we have seen to mean both "life" and "a serpent," and the Persians appear to have called the constellation *Serpens* "the little Ava," that is *Eve*, a title which is still given to it by the Arabs. But if Eve was the serpent mother, Adam must have been the serpent father.

In the old Akkad tongue *Ad* signifies "a father," and the mythical personages with whom Adam is most nearly allied, such as Seth or Saturn, Taaut or Thoth, and others, were serpent deities. Such would seem to have been the case also with the deities whose names show a close formal resemblance to that of Adam. Thus the original name of Hercules was *Sandan* or *Adanos*, and Hercules, like the allied god Mars, was undoubtedly often closely associated with the serpent. This notion is confirmed by the identification of Adonis and Osiris as *Azar* or *Adar*, according to Bunsen the later Egyptian *Sar-Apis*, who is known to have been represented as a serpent. The *Abaddon* of St. John, the old dragon Satan, was probably intended for the same serpent-god. It is interesting to compare the ideas entertained as to the great dragon in the Book of Revelation and those held by the Chinese in relation to probably the same being. Mr. Doolittle says: "The dragon holds a remarkable position in the history and government of China. It also enjoys an ominous eminence in the affections of the Chinese people. It is frequently represented as the greatest benefactor of mankind. It is the dragon which causes the clouds to form and the rain to fall. The Chinese delight in praising its wonderful properties and powers. It is the venerated symbol of good."

It is remarkable that one of the most ancient people of whom we have any written record—the primitive inhabitants of Chaldæa—not only bore the name of the traditional father of mankind, but were especially identified with the serpent. The predecessors of the *Akkad*, in Chaldæa, were the Medes, or *Mad*, of Berosus, and the distinctive title of at least the later Medes was *Mâr*, which in Persian means "a snake." This Sir Henry Rawlinson supposes to have given rise "not only to the Persian traditions of Zohák and his snakes, but to the Armenian traditions, also, of the dragon dynasty of Media." The Medes of Berosus belonged almost certainly to the old Scythic stock of Central Asia, to whom the Chaldæans, the Hebrews, and the Aryans have alike been affiliated by different writers. When, therefore, Mr. Fergusson says that serpent-worship characterised the old Turanian Chaldæan Empire, he would seem to trace it to the old Asiatic centre. Probably to the same source must be traced the serpent tradition of the Abyssinian kings. Bryant long since asserted that that superstition originated with the Amonians or Hamites, who also would seem to have been derived from the Scythic stock. The facts brought together in this paper far from exhaust the subject, but they appear to justify the following conclusions:—

First, The serpent has been viewed with awe or veneration from primeval times, and almost universally as a re-embodiment

of a deceased human being, and as such there were ascribed to it the attributes of life and wisdom, and the power of healing.

Secondly, The idea of a simple spirit re-incarnation of a deceased ancestor gave rise to the notion that mankind originally sprang from a serpent, and ultimately to a legend embodying that idea.

Thirdly, This legend was connected with nature—or rather sun—worship, and the sun was, therefore, looked upon as the divine serpent—father of man and nature.

Fourthly, Serpent-worship, as a developed religious system, originated in Central Asia, the home of the great Scythic stock, from whom all the civilised races of the historical period sprang.

Fifthly, These peoples are the Adamites, and their legendary ancestor was at one time regarded as the Great Serpent, his descendants being in a special sense serpent-worshippers.

DISCUSSION.

LORD TALBOT DE MALAHIDE said:—We have every reason to be obliged to Mr. Wake for his valuable and interesting paper. We must not, however, be expected to agree with him in all his conclusions. Indeed, I think Mr. Darwin would hardly admit that we could possibly be descended from the serpent. He has found us higher parentage. Before coming to any definite conclusion on this difficult subject, it is absolutely necessary to collect as large as possible an array of facts not only as to the past state, but the present prevalence of serpent worship. It is notorious that in the traditions of the Deccan the cobra plays a great part as a powerful and beneficent being. But probably one of the most startling instances of serpent-worship in the present day is an instance mentioned to me by my friend Sir Vincent Eyre, who had witnessed it himself, in France, a few years since, in the neighbourhood of the baths of Luchon. I cannot recollect the precise details, but he made a very interesting communication on the subject to the "Athenæum" journal.

Mr. PARK HARRISON had listened to the greater part of the paper with much interest, but was unable to accept Mr. Wake's conclusions. The theory that snakes were regarded in early times as emblems of electric phenomena and the wind, suggests an origin for serpent-worship more in accordance with the evidence before them; and there were other facts which might be quoted in support of the same view. Thus we are told that the Mexican god of thunder was represented with a golden snake in his hand; and the American Indians termed lightning "the great serpent." The same people also revered a cloud-serpent, answering to "the flying dragon of the air" of the middle ages, in which may be recognised the fearful yet health-bestowing thunderstorm, that frequently travels in a snake-like path, and sometimes moulds the clouds into forms more or less resembling the legendary dragon.* The meteoric theory helps to connect serpent

* "Sometimes we see a cloud that's dragonish."—SHAKESPEARE.

and sun-worship ; and though, in course of time, in some countries the emblem lost altogether its pristine meaning and became an object of worship for its own sake, in others myths like those of Hercules and the Hydra, and Apollo and the Python, show that the original idea was not lost sight of amongst intelligent races. If it had been a fact that the brazen serpent was set up for the purpose of being worshipped, it would be necessary to assume that the prohibition regarding the religious use of images of all kinds by the Israelites had been withdrawn. But there is nothing in the account quoted by Mr. Wake to show that any act of worship was paid, or directed to be paid. Several hundred years afterwards, when it had become for some time an object of superstitious reverence, we are told the symbol was destroyed for that reason. The Sethians were an Egyptian sect of no earlier date than the third or fourth century of our era. The lexicons do not appear to support an etymology that would connect Seth with serpent.

Mr. CONWAY thought that in considering the origin of serpent-worship it was necessary to remember the extent to which euphemism prevailed in ancient religion. The Greeks are said to have called the Axine Sea Euxine to soothe its roughness, and the Furies Eumenides, or well-meaning, to flatter and soften them. However that might be, it was quite consistent with worshipping the serpent as an Agathodæmon, or associating him with the rainbow (as in Persia) and the sun, that in the beginning he should have been propitiated through simple dread as the most subtle and mysterious enemy of man. It was, he submitted, a confirmation of this that even when the serpent was worshipped, there appeared also traces of a diabolical and hostile character at some time ascribed to him. Thus in India, though the cobra is honoured as of the rank of a Brahman, the mark on his head is popularly said to have been left there by the heel of Vishnu. Among the Hebrews the adoration of the brazen serpent, the ornamentation of the sacred ark with seraphim (the Hebrew word for serpents), were associated with the seeming anomaly of his appearance as a kakodæmon in Eden. No doubt in the dangerous character of the serpent the supplication of him as the agent of divine wrath began, and he was subsequently invested with the splendours of poetic and mythological invention. It was very remarkable, as Mr. Wake had remarked, how deep a hold the serpent superstition had upon human nature. It scorns the usual ethnical limits. Connected as he is in India with the rain-cloud, he is no less so associated among Africans, and he (Mr. Conway) had often seen negroes kill a snake in times of drought and hang it up by the tail to bring rain. In confirmation of what Mr. Wake had said concerning the recent case of serpent-worship in France, he (Mr. Conway) might add that there was now appearing in a New England magazine a story based upon the legend actually told, as he happened to know, by a peasant girl of Fontainebleau, in good faith, to the authoress of that story, of the descent of their family from a serpent. Here was the fair Melusina fully accredited in France in our own day.

Dr. A. CAMPBELL said that he did not intend making any remarks on the paper which had dealt so fully with serpent-worship all over the world, but he begged leave to draw the attention of the meeting to the vase now exhibited, illustrating some form of serpent-worship in India, and he hoped that some one present would be able to interpret the bearing of the vase, as he could not do so himself. Dr. Campbell had borrowed the vase for this occasion from Dr. Hooker, to whom it had been brought from Calcutta by Dr. King, Superintendent of the Botanical Gardens there. Dr. King, who was not in England now, was informed that the vase was believed by priests and people—Hindoos—to be prehistoric in design and workmanship. Dr. Campbell directed attention to the beautiful workmanship, as well as the elegant form of the vase, which was of silver. The body of it was the shape of a water-goglet or caraffe, but with wider neck and mouth. Over the mouth of it rose a many-headed crest of the cobra serpent, beautifully engraved, and, as it were, guarding the contents of the vase, supposing it to be the holy Ganges water. The handle of the vase was formed by the body of the serpent bending backwards from the neck. This was equally graceful in form, and of beautiful workmanship. At the top of the handle is a standing figure of Hooniman the Monkey, General of the Ramayun. In front of the vase, attached to it, but not communicating with the interior of it, is a projecting vessel, resembling the open lamp or "cruishkan" used in Scotland, Ireland, and India at this day. Dr. Campbell said that this projection and the snake heads may, however, be symbols of greater mysteries which he could not fully explain.

Mr. GEORGE DIBLEY said :—I take the liberty of entirely dissenting from the views of the gentleman who has just addressed the meeting. To discuss the opinions of religious professors relative to the serpent recorded in Genesis does not fall within the province of this Society, as we should get into an interminable discussion, resulting in an absolute waste of time in consequence of having to deal with a variety of hypotheses which are generally generated in the imaginations of those who make them, and are therefore necessarily of a most contradictory and even absurd character. I am a little disappointed, as the title of the paper does not appear to me to have been fully borne out even by the able remarks and facts that have been narrated by the writer. To ascertain the origin of serpent-worship appears to me to be a most difficult subject, as it lies still in the depths of the yet unfathomed ocean of antiquity. One great difficulty in treating with these far prehistoric subjects is our incapacity of transforming ourselves into the same circumstances and ideas that existed in such remote periods, as it is only by so doing that we can get even an approximately correct view concerning them. As many suggestions have been made this evening, I think I may be pardoned for offering one. It appears to me that serpent-worship must have originated in a purely symbolical age. One indication of this is its comparative universality. Serpents probably symbolised sensation ; sensation is universal ; and we well know that any one

who simply gratifies his senses without the correcting influence of his intellectual and moral faculties soon becomes degraded ; hence the award that "dust should be the serpent's meat." The manifold forms of serpent-worship may have been expressive of a variety of particulars which flow from sensation.

Dr. CARTER BLAKE considered that America was *par excellence* the country of serpent-worship, which need not necessarily have originated in Central Asia, and pointed out that true worship of serpents had been observed in parts of the world where ophidian reptiles do not exist.

Dr. CHARNOCK thought serpent-worship might in some cases have originated through a wrong interpretation of proper names and the mixing up of mythology with the Scriptures. Thus Ops (*i.e.*, Rhea or Semele), who was daughter of Coelus and Terra, and whose name is really derived from *ops, opis*, riches, was supposed by some to have been called from *οφις*, a serpent. Saturn (son of Ops) begat Jove, which is without doubt etymologically the same name as Jehovah. Saturn, Noah, and Janus have been thought to refer to the same deity ; and Janus was represented by the Phœnicians in the form of a serpent with his tail in his mouth. Osiris, Oceanus, Serapis, and Apis, and the patriarch Joseph, have been supposed to be identical. The Egyptian form of Apis is *Αβων*, whilst *Οβιον* is rendered "serpens," and Achelous, son of Oceanus, metamorphosed himself into a serpent. Again, the winged serpent Cnuphis or Cneph (*Κνηφ*) in Egyptian mythology was esteemed the good genius and creator of the world. Canopus, pilot of Menelaus, was wrecked on the coast of Egypt, and died there of the bite of a serpent. After his death he was honoured with a monument, and a city erected and named after him, where he was worshipped under the name of Serapis. Further, the Hebrew *seraph* is rendered "pytho," whilst the plural *seraphim*, is translated both "winged serpents," and "bright or shining angels." Apart from the paper, he (Dr. Charnock) thought the distribution of serpent worship had been over-rated, and that some authors discovered it everywhere. According to some, Abury showed serpent-worship, so did Stonehenge, and even the *Pierres Alignées*, at Carnac in Bretagne. It had lately been thought to have prevailed in Argyllshire, partly on the ground that the town named Oban means "serpent of the sun." A Phœnicio-Egyptian compound having such a meaning might possibly be corrupted down to Oban ; but the place more probably had its name from being situated on a beautiful bay, *oban* in Gaelic meaning a bay or harbour.

Mr. WAKE said in reply that, of course, he did not mean to suggest that man had actually had a serpent origin. He merely stated the ideas of other people. Referring to Mr. Harrison's opinion that the superstitious regard for that animal had arisen from the belief common among the American tribes that the lightning is a great serpent, he believed, on the other hand, that the atmospheric connection of the animal in question was of a more recent origin than that which associated it with the spirits of the dead. Mr. Moncure Conway had

referred to the universal prevalence of the serpent superstition, and to the fact that in India the cobra has the position of a Brahman, but he could not determine whether the serpent was first feared as a demon or venerated as an Agathodæmon, although probably it was the former. His (Mr. Wake's) view, however, was that the original feeling was one neither of fear nor of reverence, but an indefinite one, arising from the uncertainty as to whether the serpent embodiment of the deceased ancestor had presented itself for a good or an evil purpose. The serpent would afterwards come to be regarded with dread or veneration by various peoples, according to the ideas which they had gradually associated with it. In all the ancient mythologies, moreover, there were both good and bad serpents. Mr. Charlesworth had regretted that the paper did not refer more fully to the element of serpent-worship in our national theology. The omission had been intentional, but he fully admitted its importance, although, so far from accepting Dr. Adam Clarke's notion of the serpent of the fall being an ape, he believed that according to the original reading of the legend the serpent and the man Adam were one and the same. The temptation was the seduction of the woman by the man, or the reverse, the sexual act necessary to the perpetuation of the human race having been considered as a sign of moral impurity. The serpent might thus be viewed as a symbol of the sexual sense, but there was no ground for supposing it to have symbolised the senses, as Mr. Dibley thought. It was more likely to have represented the matter by which the senses are seduced. Dr. Carter Blake had referred to the existence of serpent-veneration in countries where no serpents are to be found; and the author believed that the meaning of the legend that St. Patrick expelled all the snakes from Ireland was that he put down serpent-worship. The co-existence of the phallic symbol, the open red hand, and the serpent superstition in America mentioned by Dr. Blake, was interesting, but the latter superstition could be said to be phallic only so far as the serpent was viewed as the embodiment of the deceased ancestor. No doubt, as Mr. Price remarked, the power of distending the head, possessed by the cobra, led to this animal being treated as emblematic of the male activity, but that might be explained without holding the serpent superstition to be really phallic. Veneration for the serpent may sometimes have originated, as supposed by Dr. Charnock, in mistakes as to the meaning of certain names met with in ancient mythology, but he (Mr. Wake) thought that these would, if thoroughly examined, support the view he had taken. Finally, he said that he could not accept the opinion referred to by Dr. Blake, that serpent-worship had originated on the American continent. That was part of a much wider question, but he believed that the American nations among whom the superstition was the most prevalent had sprung from Central Asia, and if so their serpent-worship must be traced to the same position.

The Director read the following paper :

On GĀRO HILL TRIBES, BENGAL. By Major H. H. GODWIN-AUSTEN, F.R.G.S., F.Z.S., etc., Deputy-Superintendent Topographical Survey of India.

IN a paper read before the Anthropological Institute in May, 1871, I gave some account of the customs of the Khāsis, particularly those connected with the erection of stone monuments similar to those known in Europe as druidical. In the present communication I propose to touch on a few points of interest connected with the tribes on their west, viz., the Gāros, occupying the extreme west point of the range of hills south of the Brahmaputra, and which terminate with the great bend of that river, on long. 90° E. The Gāros are of Bodo origin, and are closely allied to the Kachāri, who are found along the base of the hills from Gwalpāra to the Kopili river, where they have long been the principal tribe, extending across the hills to the southern base in Cachar. The Méch of the Bhūtan Dūars is also a kindred tribe. The languages of the Gāro and Kachāri of the Kopili, are very similar ; neither erect stone monuments, and both burn their dead. The Kachāri are certainly Hinduized, and have received a certain admixture of western blood, and they are taller and better featured than the Gāro.

Occupying the intermediate strip of country on the Um Blay river, between the Khāsi and the Gāros, there is a small tribe, the Migām or Langām, speaking a different dialect but assimilating more with the latter ; they are darker than the former, cultivate cotton, and build houses raised off the ground ; they dress like Gāros, but the women never wear the numerous and heavy earrings of that tribe. Stone monuments are not erected by them, but they resort to the general forms of sacrifice and incantation in case of sickness, etc. ; the sacrifice of fowls and the smearing of the door posts, or green boughs of trees set up near them, with the blood and feathers, having been noticed by me in both Gāro, Langām, and Khāsi villages. They erect carved stakes and bamboo platforms, on which are placed offerings as propitiation for good fortune. I give a drawing of one of these perishable monuments, and am of opinion that in the same way as the former use of wood in the construction of Hindu temples on the continent of India affected the style of architecture afterwards adopted, so these primitive wooden posts and tables led to the construction of the monolith and dolmen—their use and the motive being, as we find in tribes living contiguous in the Khāsi hills, precisely similar.

An uneven number of stakes is set up, and this is the same with the Khāsi monuments ; they are of bamboo, split up at the

head, and opened out to carry a little plaited table on which offerings are placed. The table in front is made of the same wood and tied together with twisted strips of cane. I have noticed leaves with a few grains of rice placed on this, and a pig or goat is sacrificed at the time they are set up. At the base of the stakes in the drawing, imitations in wood of the small short hoes used in weeding their fields are represented, and a broken "ghara" (water vessel) may often be seen. I believe this particular "offertory" had been erected to ensure a good harvest. The Gāros further west have a custom of setting up variously carved and peeled posts to avert sickness or any ill-luck, a custom also practised by tribes in Aracan, and alluded to in a paper read last June at the Anthropological Institute, by Mr. St. Andrew St. John. To give drawings of all the different forms would be very difficult, but I give one as a type of what they are generally like. Some are very large and intricately fashioned. That represented here was to avert headache and light-headedness, not an uncommon complaint with them after one of their drinking bouts.

A very interesting section of the Gāros is a small clan called Ātong, who have again a different dialect containing a great number of words not in use by other and neighbouring sections. On comparison many of these appear derivable from dialects on the Manipūr side, and it is not improbable that these Ātongs have found their way thence, at some distant period, along the base of the North Cachar and Khāsi hills into this locality, in the same way as we find Manipūri emigrants recently settling in Shūshang (Mymensing). As an instance of how far small communities will travel, these particular Manipūris had, in the first instance, after leaving their own valley, crossed the north Cachar hills and squatted near Gowhatty, where not getting on, they followed the base of the northern slopes round the extreme end of the Gāro hills to the village where I saw them near Shūshang. In appearance the Ātong differs from other Gāros, he is rather taller, fairer, and better looking, but from close contiguity with them, dress and habitations are the same. I append a short vocabulary of the language, from which it may be seen it differs materially from all those spoken around.

One great point of difference between the Khāsi and Gāro is the use of the bow by the former, while the latter carry spears only and a very peculiar form of short sword, called "darai;" it is 2 ft. 9 in. long, the handle and blade in one piece. These swords are all made for them by Bengali iron smiths in the plains. I have never seen such a form from either the Peninsular or N.W. of India, and the nearest to it in shape is the Burmese dao; the substitution of a wooden handle for iron being

the only difference. There appears to me to be on this side of India a gradual approach from the spear (which I take to be the most primitive weapon) into the *dāo*. Spears range from the small iron pointed kind of the *Gāro*, to the very long iron headed, short hafted kind among the *Nāgā* tribes. Both people use their spears as knives or bill hooks in cutting boughs and creepers that impede the jungle paths. From the *Nāgā* form, in which the wooden haft is not longer than the iron head, to the Burmese *dāo* is but a very short advance, and into a weapon like the *Gāro* "*darai*" entirely of iron, only another, which may have had an independent origin; but as the Burmese overran the Assam valley, their form of sword would have been quite familiar to the *Gāro* people and to the iron smiths they employ. The spears are short, having heavy iron points with well sharpened edges. In action they only throw pointed ones of bamboo, every man carrying two or three. The *Gāros* fear the bow and arrow of their neighbours, and the two people appear to have seldom molested each other. They do not appear to possess any fire-arms, or if they have any, their use is most restricted. The houses of the interior villages are well built, and are very long, raised about four feet off the ground; in every village is the "*bolbang*" or young men's house, the largest in the place, built upon very large upright posts, the front beams adorned with some little carving. The floor is at least twelve feet, often more above the ground, ascended by notched logs and the roof solidly thatched. In this house all the unmarried males live, as soon as they attain the age of puberty, and in this any travellers are put up; this custom prevails also among the *Mikirs* and the *Nāgā* tribes, but not among all *Kūkis*. The *Gāros* burn their dead, and after cremation curious railed enclosures, with a grating above, are made of bamboo matting, with grotesque carved posts standing at the corners. I saw no less than three of these in one village street, and I produce a drawing which will give, I hope, a fair idea of what they are like. This is what Mr. John Elliot says, "*Asiatic Researches*," vol. iii. (1792):

"The dead are kept four days, burnt, the ashes put into a hole exactly where the funeral pyre was made, covered with a small thatch building and surrounded with a railing; a lamp is burnt within the building every night for a month or more, the wearing apparel of the deceased is hung on poles fixed at each corner of the railing, which after a certain time, from six weeks to two months, are broken and then allowed to hang downwards till they fall to pieces. They burn their dead within six or eight yards of their *changs*, and the ceremony is performed at exactly twelve o'clock at night; the pile is lighted by the

nearest relation; after this they feast, etc. If it be a person of rank, a bullock is sacrificed and the head of the beast burnt with the corpse, but if it be an upper hill Gāro (a chief) the head of one or more slaves would be cut off and burnt with him. The railed graves of head men are decorated with images of animals.”*

The manners, customs and ceremonies of these people have never been fully described, and I was unable to obtain complete and satisfactory information owing to my colloquial ignorance of the language; information obtained through interpreters is not always trustworthy, and requires verification by long residence among them. Captain Williamson who has had great opportunities will, no doubt when his duties permit, give us something more definite. They practise human sacrifice, and generally select their victims out of the Bengali villages in the plains. The last season my survey party worked in the Gāro hills, a Goorkha of the establishment was captured and never seen again; his companion had a narrow escape, being chased for a long distance with the help of dogs. Blood feuds seem very common among the different clans, and they exercise their revenge on women and children alike. They eat animal food of every kind, even reptiles; dogs they are very fond of, and large numbers of puppies are brought up in the plains, fattened by the outer Gāros and taken into the interior for barter. They are diligent cultivators. I saw more joomed (cleared) land in the interior than in any part of the Khāsi-Gāro range, and cotton is their principal crop. The women adorn themselves with a great number of large brass ear-rings, so heavy that they drag the lobe of the ear down to the shoulder, and it often requires a chain passing over the top of the head to prevent this from breaking; ears so destroyed are often seen. Armulets of brass are also worn and necklaces of small red coral beads. The Langām women pile these necklaces on until the neck is completely hidden, and nearly as broad as the head above, giving them a most peculiar short necked appearance. The women wear a very short strip of striped blue coloured cotton (of their own manufacture) round the waist, and are quite nude above, throwing a white cloth over the shoulders only in cold weather. The men wear a very narrow waist cloth tied behind and then brought up between the legs; the portion hanging over in front is sometimes adorned with brass boss-like ornaments, and white long shaped beads, made out of the columella of certain conch shells, manufactured by Gāros at the base of the hills. A curious

* They believe that after death the soul of a Gāro goes to the peak of Chickmung or Kylas of the Bengalis, which is the most conspicuous point in the hills. This peak they consider very sacred and they never ascend it.

tinsel coronet is worn by men in the independent villages who have taken a life in action. The Gāros are short and robust with well-formed strong limbs, but their faces have a disagreeable coarse expression; a good-looking individual is seldom seen. The women shorter and more square in figure, certainly ugly, and as a race they are inferior to all the hill tribes I have seen on the Eastern frontier. Among the Khāsis, Kūkis, and especially the Mikirs, very good-looking young men and women are to be seen.

DISCUSSION.

Mr. LEWIS said no one could fail to see the resemblance between the stone erections of the Khasias as depicted by Dr. Hooker, and the bamboo erections of the Gāro tribes as depicted by Major Godwin-Austen; but at the same time he hesitated to accept the suggestion of the latter gentleman that the bamboo structures were the originals from which the stone monuments had been copied. He thought it more probable that the stone monuments were the originals, and that the Gāro tribes had adopted bamboo from want either of suitable stone, or of ability or inclination to make use of it. It was worthy of remark, also, that whereas the Khasian erections were, according to Dr. Hooker, generally memorials of the deceased, the Garo structures were, according to Major Godwin-Austen, used for sacrificial purposes, as, according to Colonel Forbes Leslie, were lines of upright stones in Southern India.

Dr. A. CAMPBELL said that he considered Major Austen's paper a very interesting one, especially as it followed Mr. St. John's paper on the Hill Tribes of Aracan, recently read before the Institute, thus bringing to our notice some of the people who inhabited a portion of our Indian frontier not very well known to us before. In this region, we find from these papers, and from the accounts of the late campaign against the Looshais, that there is a great admixture of different bloods. We have the northern Aracan tribes assimilated to some extent with the Burmese on the one hand, and on the other with the Looshais and Gāros. In this corner of our frontier—south of the Burrampootur—it may be said that the Indo-Chinese and the Indo-Himalayan races meet and mingle to form the existing tribes—viz., the Munnipoorees, Kookees, and Looshais; the Garrows, the Northern Arracanes, Khasias, Nagas, and others. From Major Austen's description of the Garrows, it would appear that they are less savage now than they were when we first came in contact with them—about the end of the last century; at least he does not allude to any peculiarly savage customs, as he no doubt would have done had such been prevalent. In 1815, the joint-magistrate of Bungpoo, in reporting on the Garrows, said:—"When a quarrel arises between two Garrows, the weaker party flies to a hill to elude the vengeance of his more powerful antagonist. Both parties immediately plant a tree bearing a sour fruit called M. Nakar, and make a solemn vow that they will avail themselves of the earliest opportunity that offers to eat its

fruit with the juice of their antagonist's head. A generation may pass away without either party finding an opportunity of revenge, in which case the feud becomes hereditary, and descends to the children. The party who eventually succeeds in revenging himself upon his antagonist cuts off his head, summons his friends, with whom he boils the head, along with the fruit of the tree, and portions out the mixed juice to them, and drinks of it himself. The tree is then cut down and the feud is at an end. This account exhibits such a shocking instance of human depravity, that I should not have deemed it for a moment worthy of credit, had not subsequent inquiry from other and various sources satisfied me that the practice really existed." Dr. Campbell further said that he thought the time had now come, when any of the innumerable tribes of our Indian possessions were described, that it should be ascertained, as far as possible, to what extent their habits and customs had become less savage from contact less or more close with Europeans. Dr. Campbell believed that a gradual improvement was taking place, no doubt attributable in a great degree to our presence in India. Dr. Campbell could not recollect that any one tribe in India had in the course of our rule there become extinct or had retrograded; whereas in America and Australia tribe upon tribe had become extinct, and many of the remaining ones were degraded below the level of the brutes since they came in contact with Europeans; and this, Dr. Campbell thought, was very gratifying on the one hand, and very distressing on the other.

The meeting then separated.

JANUARY 7TH, 1873.

SIR JOHN LUBBOCK, Bart., M.P., F.R.S., *President, in the Chair.*

THE minutes of the previous meeting were read and confirmed.

GEORGE JAMES DUNCAN, Esq., B.A., Old Square, Lincoln's Inn; and ROBERT EMMETT LARGE, Esq., South Square, Gray's Inn, were elected members.

IL CANONICO SPANO, of Sardinia, was elected a Corresponding Member.

A. P. REID, Esq., M.D., was elected Local Secretary for Halifax, Nova Scotia.

The following presents were announced, and the thanks of the meeting voted to the respective donors.

FOR THE LIBRARY.

From the SOCIETY.—Catalogue of Library of the Royal Geographical Society, to 1870.

- From the SOCIETY.—Proceedings of the Royal Society, vol. xxi, No. 139.
- From the EDITOR.—Medizinische Jahrbucher Herausgegeben der K. K. Gesellschaft der Aerzte. Wien, No. 4, 1872.
- From the ASSOCIATION.—Journal of the Royal Historical and Archæological Association of Ireland, vol. ii, No. 2, 1872.
- From the ACADEMY.—Verslagen en Mededeelingen der Koninklijke Akademie Amsterdam, 1872. Jaarboek van ditto, 1871. Processen Verbaal, ditto, 1872.
- From the AUTHOR.—On the Agricultural Geology of the Weald, with map, by Wm. Topley, F.G.S.
- From JAMES BURNS, Esq.—Human Nature for January 1873.
- From the EDITOR.—La Revue Scientifique, No. 27, Jan. 1873.
- From the PALERMO INSTITUTE.—Giornale di Scienze Naturali ed Economichi, tom ii, fas. 1.
- From the EDITOR.—The Spiritualist (to date).

The Director read the following paper:

THE ATLANTEAN RACE OF WESTERN EUROPE. By the late J. W. JACKSON, M.A.I.

IN an admirable paper on "The Kimmerian and Atlantean Races" by Hector Maclean, Esq., read before the Ethnological Society of London, November 8th, 1870, and in some remarks by Mr. J. F. Campbell, of Islay, and in a postscript by the latter gentleman, under the head of Anthropological Notes, in the July number of the Journal of the Anthropological Institute, frequent allusion is made to a dark Atlantean race, commingled with the fair Kimmerians; these Atlanteans being regarded by Mr. Campbell, as being probably of Turanian origin. It is the latter opinion which it is the object of this paper more especially to controvert, although as an introduction to this, it would be well to make a few remarks on the Kimmerian and Atlantean hypothesis generally.

That the predominantly red-haired and russet Kimmerians, and fair-haired and blonde Teutons, are of Aryan origin, there can be no doubt, but whether because of Aryan origin they should therefore be derived from the East, is quite another question. To those who think with me, that Europe rather than Asia is the primal seat, and therefore the more appropriate habitat of the Aryan type, this assumption of an Oriental origin for a people whose most vigorous individualities, whether regarded mentally or physically, are found in the West, must seem worse than doubtful: it must be regarded as altogether untenable. If Asia were the birthplace of these tall, large-headed, high-featured, fair-skinned men, with hair of "metallic lustre," and we may add, brains of Jovian weight and force, how is it

that the type, to all practical intents and purposes, has there become extinct, while it not only flourishes in perennial vigour in western Europe, but is "coloured with warmer and brighter tints" in Britain, than in either France or Germany. If this be indeed so, then all our ideas about the influence of ethnic area must undergo revision, and we must be prepared to admit, that a distinctly characterised type can not only exist permanently on an alien site, and under telluric conditions very different from those attaching to its place of emergence; but that in virtue of this geographical transference, its aboriginal specialities may be intensified, and all its higher qualities increased in power and efficiency. The origin of the Kimmerian, it will thus be seen, is part of a larger whole, and cannot be definitively settled as an isolated fact. It amounts to this, the so-called Caucasians of Europe, whether dark or fair, are either aboriginal or derivative; and as yet we are only at an incipient stage in the controversy which is ultimately to decide this very important question. We have neither the moral nor material data for its solution. We lack the requisite lingual, mythological and archæological facts on the one hand, and we are deficient in the needful ethnic minutiae on the other. Having, however, already committed myself in several papers, perhaps rather prematurely, to the non-Asian origin of the so-called Aryans of Europe, I will say no more on this particular subject at present, lest my remarks should partake of the zeal of the partizan, rather than the calmness of the investigator.

Whatever the origin of the Kimmerians, however, there is no doubt they have been located in Europe from before the period of authentic history or even reliable tradition. They are portrayed in the poems of Ossian, they are described by Tacitus, and they were painted to the life by Homer. All that we can say of them then at present, from the historical standpoint, is, that they are one of the fair races of Europe, and the only other point respecting them remaining for solution, is their ethnic grade, as compared with that of either the fair or the dark races with whom they are commingled. And here perhaps we shall not be far wrong in affirming that they are the most vigorous of all the fair types of the West. They are the tallest, their legs are the straightest, and their thoracic bears the largest proportion to their abdominal development. This is only saying in detail, that they are the most effectually Caucasianised of all the xanthous varieties of man. Whether, however, they should be regarded as pure Celts, or as the most advanced and matured of the Teutonic types, allied to, if not identical with, the Scandinavian, or as simply a fair European race, *sui generis*, is, we think, yet open for discussion. We incline to the last view, but would

especially deprecate any approach to dogmatism on a subject, for the satisfactory settlement of which, the resources of anthropology are as yet altogether inadequate.

But are we thus shut up to the necessity of supposing that all the Aryans were golden-haired, russet, or as Mr. Campbell phrases it, "burnt sienna" men? Were all, or even a majority of the Greeks and Romans thus characterised? And yet how thoroughly Aryan were their magnificent inflectional languages, the true sisters of the Zend and the Sanscrit. And it need scarcely be said how thoroughly Caucasianised was their type, more especially as regards the fundamental element of *form*. And as still existent and observable facts are of the utmost value in Anthropological investigations, we may again ask in this connection, are the modern Greeks and Italians a fair-haired, golden-haired, or russet race? Nay, we may go yet farther, and ask if the climatic conditions of the Mediterranean seaboard are such as to permit of the permanent existence of a predominantly xanthous people on such an area.

And here we probably touch on the producing influences to which, in large part, we owe the Kimmerian type. It is the product of a northern temperate clime, acting on a Caucasian organization specially adapted by the powerful development of respiration for having the blood effectually oxygenated, in the case of those families and individuals, who as soldiers, sportsmen, shepherds or agriculturists, live largely in the open air. And it will accordingly be found to abound far more in the country than the town, while it is more common in the northern than the southern portion of Britain, in fact, because the population of the latter are more predominantly urban. As regards the diversities of the xanthous type, we think it will be found that a hilly or open country, devoid of wood and not especially swampy, tends to produce hair of a golden tinge; while a low country, rather abounding in wood, tends to produce a blonde complexion with fair hair. "lassies with the lint white locks." Thus contemplated then, as already observed, we do not regard the Kimmerians as specially Aryans, but simply as one of the rural varieties of this exalted type, producible and sustainable wherever there are breezy downs and bracing uplands for its permanent invigoration.

In our remarks on the Kimmerians we had occasion to allude to several fair races. May there not be an equal, or even a yet greater number of dark races? If, indeed, the dark type be the older of the two, have we not reason to believe that it will have attained to greater ethnic maturity on its own plane, and so have arrived at more of racial subdivision than its fairer rival? We must demur then to the use of the word *Atlantean*, except

avowedly as a generic term covering a vast range of subordinate varieties, some of whom may possibly be non-Aryan, but not necessarily on this account non-Caucasian. It is here that we differ from Mr. Campbell. In his remarks he seems to imply that all who are not Aryans must be Turanians, quite forgetting the predominantly dark-haired and dark-eyed Semites, who certainly abound in Spain and southern France, if not in Ireland and south Britain. Mr. Maclean has been more cautious in this respect, and if we mistake not, rather inclines to the hypothesis of a possibly African origin for some of his Atlantean types, whose predominant characteristics are assuredly not Turanian, even if non-Aryan.

And here we are brought to a consideration of the origin and relation of the dark Caucasian types of the world, a very important problem, for it involves the character, quality and ethnic status of those who as Hindoos, Egyptians, Phœnicians, Assyrians, Persians, Greeks and Romans transacted what we term history, and in effect developed, what we commonly understand by civilization. Perhaps we should not altogether err in this matter, were we to succinctly define the dark-haired and brown-skinned (melanic) Caucasian, as the man of the past, and his xanthous brother as the man of the future. In this, as in much else, we are at a transitional stage in the great and steadily unfolding drama of human destiny; what we now witness being the gradual transference of empire from the melanic to the xanthous division of the Caucasian race. In its military phase, this began with the conquest of the dark Roman by the fair Goth, and was continued in the overthrow of Napoleon I. by the red-bearded Russian; and of his nephew by the light-haired German. In the theological sphere it was continued at the Reformation, and it is proceeding intellectually as empire and civilization in their north-western march, are infringing on the shores of Britain.

The dark-haired and melanic Caucasians of Europe now emerge into view under a somewhat different aspect. They are the western branch of that great family who transacted history. Perhaps they are more immediately descended from the men of the bronze era. In the sequences of organic development they doubtless preceded the xanthous varieties. They were produced under less advanced telluric conditions than the latter. Their constitution implies that there was more carbon and less oxygen in the atmosphere at the period of their ethnic emergence, and hence it is that they abound in southern countries, and tend to remain prevalent in the large cities, even of the north. As an earlier type they are, however, on their own plane, a more matured type of man than the xanthous variety. The

osseous structure is finer and less angular, the extremities are smaller, the joints are more firmly knit, and the frame is more elastic. In the matter of temperament, they are nervo-fibrous, while the xanthous are predominantly sanguineous. It is no wonder, therefore, that very many of the authors, artists and military commanders of modern Europe, more especially those of the highest order, were of this type, either pure, or mingled in large proportions with the xanthous. Perhaps we here obtain a prophesy of man's organic future at least, in the northern portion of the temperate zone. The xanthous variety will furnish physical and intellectual vigour, they are humanity cast in a larger mould, while the melanic type will provide the delicacy, refinement and susceptibility requisite for the highest culture, and, we may add, the manifestation of the finest genius.

A word on the data of Mr. Maclean and Mr. Campbell, and we will conclude a paper, already too long, but for the importance of its subject matter. The first gentleman has erred from contemplating the racial aspects of all western Europe too exclusively from a Scottish standpoint. As a result of this he has exaggerated the importance of the red Kimmerian, as compared with the other xanthous varieties of the north. This, however, was an error on the right side, as the neglected Kimmerian wanted a man to stand up for him in the Anthropological arena. Mr. Campbell has erred from taking the social *débris* of London and Paris, as fair specimens of the smaller Atlantean variety of European man. This has led him into the palpable mistake of supposing that the melanic is a less effectually Caucasianised variety of man than the xanthous. He seems to have overlooked the fact that in all great cities there is a debased sediment, in fact, the degraded instruments and victims of the vices attendant on a showy but corrupt civilization. Now this class, as I pointed out in my paper on the Aryan and the Semite, tends by a process of racial retrocession, which we may term collective atavism, to return, on an Aryan area, to a semi-Turanian type, while on a Semitic area, it equally tends to assume a semi-Negroid form. When very strongly emphasised, this constitutes what is commonly known as the criminal type, which is in reality a return to, or a remnant of the savage root-form of the race in which it is manifested.

The practical conclusions then to which we are brought are, first, that although there may be a large underlying Turanian element in the population of western Europe, this is not special to either the melanic or xanthous variety, under both of which thoroughly Caucasianised individualities are often found. And secondly, of the two great divisions of the Caucasian type of Europe, the melanic is the older and the more finished, but

being formed aboriginally, on a smaller scantling and under inferior telluric conditions, its greatness is a matter for retrospection rather than anticipation. And lastly, that the highest, noblest, and most richly gifted type of our immediate future, will be the product of a union and interfusion of these diversely constituted varieties, this process being somewhat akin to that by which the old Aryans and Semites were more or less commingled at an early historic, if not prehistoric, period on the border lands of Hellas and Palestine; the product being Jews and Phœnicians on the one hand, and perhaps we may add, Greeks, if not Romans, on the other. As was the past so will be the future, what the world is about to witness being, not the submergence of the nervous by the muscular races, as at the fall of Rome, but the emergence and interaction of the nervous races among themselves, with a reproduction on a yet grander scale, of what this same process produced among the classic and Semitic peoples of historic antiquity.

DISCUSSION.

DR. A. CAMPBELL said that, as a native of the Western Highlands of Scotland, to the inhabitants of which Mr. Hector Maclean's and John Campbell of Islay's papers referred, he wished to remark that whether the Atlanteans of red and fair hair were Aryans, and the black-haired ones were Turanians, he could not determine, but from his own observation of Parsees, modern Persians, Affghans, Scindians, Sikhs, Mahommedans, high caste Hindoos—all Aryans—he did not think these Atlanteans came from the East. Nor did he think that the black-haired ones were Eastern Turanians either. The Western Highlanders were of four colours—1. The red-haired, Teutons; 2. the fair-haired, Scandinavians; 3. the brown-haired, long-limbed section, and 4. the black-haired and short-statured section. The last were not like Eastern Turanians, but they did resemble many of the people on the shores of the Mediterranean about Mentone, Monaco, and Nice.

The following paper was read by the Director :

THE KOJAHS OF SOUTHERN INDIA. By JOHN SHORTT, M.D.,
Local Secretary of the Anthropological Institute, for Madras.

THE true Kojahs, or Eunuchs, are not numerous in Southern India. They are chiefly seen about the houses of wealthy Mussulman nobles, by whom they are placed at the head of their zenanas or harems. Sometimes they hold important charges with a considerable amount of general control. The ladies of the harem look upon them as their confidential advisers in all matters relating to their personal concerns, whilst to them is left the entire management, arrangement, and supplies, etc.,

of the interior. In fact, all that concerns the female apartment is confided to their care. The Kojahs are popularly divided into two classes—1. *Kojahs*; 2. *Higras*—forming two distinct bodies, each of which it is my object to describe briefly in this paper.

The system of castrating human beings to make eunuchs of them seems to have had its origin in Asia, and is of a very ancient date. As an institution it is peculiar to Orientals, for we find allusions made to eunuchs in both the Old and New Testaments; and from the class of people among whom it prevails there is every reason to suppose that it originated with the prevalence of polygamy. From the fact of native princes burdening themselves with a large number of wives and concubines, they soon began to grow jealous of them, and most probably resorted to the pernicious system of castrating men, with the view of entrusting to these the charge of their overburdened zenanas or female apartments. It is possible that the idea may have originated in seeing natural-born eunuchs, but when the system was once introduced it seems to have taken deep root as an institution by finding favour among the nobles and wealth of the land. At the present day the practice as a system is entirely confined to Moslem communities and countries where polygamy continues rampant. The people preferred for this purpose seem to have belonged to a tribe of negroes who are recognised by the name of *Schaban*, or black eunuchs; but it is by no means confined to these people entirely, but is open to all classes, castes, and sects, should they as children fall into the hands of money-making scoundrels, who, after practising castration, generally bring them up in the Mohammedan faith. Sometimes Hindoos, Sudras, and Brahmins, subject themselves to the operation of their own accord from a religious impression; others, finding themselves naturally impotent, consider it necessary to undergo the operation to avoid being born again at a future birth in the same helpless state. In some parts of upper India these self-mutilated eunuchs form a community of their own and set up a shrine, at which they worship and go a-begging with a view of supporting themselves and community, each individual being bound by certain rules to hand over a portion of his earnings for the benefit of the community at large. The operation of castration is generally performed by a class of barbers, sometimes by some of the more intelligent of the eunuchs themselves, in the following manner. The patient is made to sit on an upturned new earthen pot, being previously well drugged with opium or *bang*. The entire genitals being seized by the left hand, an assistant, who has a bamboo lath, slit in the centre, runs it down quite close to the pubis, the slit firmly

embracing the whole of the genitals at its root, when the operator, with a sharp razor, runs it down along the face of the lath and removes penis, testicles, and scrotum in one swoop, leaving a large clean open wound behind, in which boiling gingley* is poured to staunch the bleeding, and the wound covered over with a soft rag steeped in warm oil. This is the only dressing applied to the wound, which is renewed daily, while the patient is confined in a supine position to his bed, and lightly fed with congee, milk, etc. During the operation the patient is urged to cry out "*Deen*"† three times. These cases, I believe, generally do well, and the cicatrix of the wound is scarcely perceptible, except by the fringing of the skin around the urethral orifice, when the operation is resorted to at an early age; but in the adult the cicatrix around the urethra is visible to the extent of a rupee or somewhat less. I am not aware of castration being practised in any part of southern India. The operation is performed, I believe, in the city of Hyderabad, in the Deccan, and in many parts of upper India, whence eunuchs are sometimes imported when a demand is made for them. There is every reason to believe that the practice will continue to exist among the Asiatics for many years to come, in fact as long as the system of polygamy exists; but it is possible that as the light of civilisation dawns, and Christianity penetrates the dark recesses of the zenanas, this vile system may be abandoned as woman becomes an intelligent being, and not the caged animal she is at present considered to be, the mere toy to the lustful passion of man.

Of the two classes, the Kojahs are the artificially created eunuchs, in contradistinction to the Higras (impotents), or natural eunuchs, as they are termed. In the Kojahs, castration is well marked by the absence of the growth of hair on the face, pubis, and other parts of the body. The voice continues unchanged, and is more or less squeaky and soft, the features changing into the female expression with a certain amount of softness, followed by obesity of the person.

Some years ago three Kojahs came under my personal observation for some time. They were at the head of the State prison or "Royal Mahal" at Vellore, in charge of some of the wives, descendants, and other female connections of the late Tippoo Sultan. They were respectively named Umber, Shayee, and Mahomed. Each held a distinct charge. Umber was the chief, about fifty years of age, very obese, and weighed 320 lbs. avoirdupois. He stood about 5 feet 8 inches in height, of simple

* Commonly termed sweet oil, extracted from the seeds of the *Sesamum Indicum*.

† The faith in Mahomet.

habits, but passionately fond of cock-fighting, had a large establishment of game-cocks of the best breed in the country, and paid great attention to the rearing and training of these birds for the pit. On his death, which occurred two years after, the sale of his estate realised a large sum, the game-birds fetching large prices. Umber died of general dropsy at the age of fifty-two. He was subject to obstruction in the free discharge of urine, caused by the contraction of the urethral orifice. To counteract the contraction he was in the habit at all times of using a small silver tube, something after the shape of a female catheter, and about 4 inches long, every time he urinated. The mouth of the urethra could be seen slightly puckered, of a pale flesh colour, and in level with the skin of that part.

Shayee was also obese. I do not know his exact weight, but should think he was over 200 lbs., and about 5 feet 6 inches in height, and was said to be about forty-five years of age. He also, I believe, died of dropsy. Shayee was a great pigeon-fancier, and kept a large collection of birds at the time I allude to.

Mahomed was a tall spare man; I should say he stood 6 feet in height, and was over fifty years of age. He was a great sportsman and kept dogs and falcons, and was frequently out on shooting excursions when his other duties admitted of his absence. Possibly his active habits may account for his spare make.

In these three cases castration had been performed in childhood, the entire genital organs had been removed, and nothing but the urethral orifice was to be seen about the part. These men, though eunuchs, were highly respected, held charges of considerable trust, and were Mohammedans by birth. Tales were often repeated that the zenana women (slaves and adopted girls) were in the habit of stripping them naked and poking fun at their helplessness. They were intelligent, shrewd, and good business men, and could read and write their own language.

There were two Kojahs in the employ of the late Nabob of the Carnatic. They were both Africans; one has left Madras for Hyderabad, the other is here now. He is a middle-sized man, about sixty-five years of age, and having been seriously ill lately, he is at present much emaciated and feeble; his hands shake with senile tremor. He has no hair about any part of his body, and he has the feminine aspect so common to eunuchs. He states that he was castrated at the age of eleven at some place the name of which he does not remember, and was subsequently sold for a large sum of money, how much it was he cannot tell. He can neither read nor write, but seems a shrewd old man. On arrival at Madras he was at once transferred to the Nabob's zenana as a messenger, and was paid thirty rupees a month,

with food and clothing free. Since the death of the Nabob the Government allows him a pension of fifteen rupees a month.

The second class, Higras, or natural eunuchs, as they are termed, are not so, strictly speaking, but are said to be impotent. Whilst some are naturally so from birth, others are impressed with a belief in childhood, and are dressed up in women's clothes, taught to ape their speech and manners, whilst a few adopt it as a profession in after life. They are chiefly Mussulmans. I examined several of them from time to time, and found them not only strong and muscular, but with their genital organs natural and perfect both in size and appearance. In some one or two the testicle appeared somewhat smaller in size, but in shape and appearance they were natural. All had plenty of hair about the face, chest, arms, pubis, and legs; so that they did not differ from other men but for the female dress and manners, which they ape to perfection, although sometimes overdone. The hair of the head is put up like women, well oiled, combed, and thrown back, tied into a knot, and shelved to the left side, sometimes plaited, ornamented, and allowed to hang down the back; the whiskers, moustache, and beard closely shaven. They wear the cholee or short jacket, the saree or petticoat, with an apron or scarf which they wrap around the shoulders and waist, and put on an abundance of nose, ear, finger, and toe rings. They cultivate singing, play the *dhole*, a country drum of an oblong shape, and attudinize. They go about the bazaars in groups of half-a-dozen or more singing songs with the hope of receiving a trifle. They are not only persistent but impudent beggars, rude and vulgar in the extreme, singing filthy, obscene, and abusive songs to compel the bazaar-men to give them something. Should they not succeed they would create a fire and throw in a lot of chillies, the suffocating and irritative smoke producing violent coughing, etc., so that the bazaar-men are compelled to yield to their importunity and give them a trifle to get rid of their annoyance, as they are not only unable to retain their seats in the bazaars, but customers are prevented from coming to them in consequence. With the *douceur* they get they will move off to the next bazaar to resume the trick. This game they pursue with impunity, but I am not aware if they still continue to carry it on under the ken of the Mofussil police and with the operations of the Indian penal code. While such were the pursuits in the day, at nightfall they resorted to debauchery and low practices by hiring themselves out to a dissipated set of Moslems, who are in the habit of resorting to these people for the purpose, whilst they intoxicate themselves with a preparation termed *majoon*, being a confection of opium and a kind of drink termed *baja*, a species of country beer

manufactured from *raji*, which also contains bang; in addition to this they smoke bang. The Higras are met with in most of the towns of southern India, more especially where a large proportion of Mussulmans is found.

DISCUSSION.

Dr. A. CAMPBELL said that the system of having eunuchs in charge of the harems of Mohammedan princes was general all over India. The greater number of these eunuchs were Africans, and many of them attained to high positions of trust at native courts, as the Kojahs of Southern India are said to do by Dr. Shortt. They reach India mostly by way of the Persian Gulf. With reference to the operation of castration described by Dr. Shortt, Dr. Campbell said that at an early period of his service in India he was attached to the British embassy in Nipal. This was an independent state in the Himalaya, on the northern frontier of Bengal, and it was governed under the Hindoo law, by which the extreme penalty in cases of adultery with a woman of the highest castes by an outcast was castration, by the removal of the whole genital organs. The operation in these cases was performed with a common knife, the whole genitals being removed at one cut, and the criminal left to live or die unaided. On almost every occasion of these executions some of the survivors used to find their way to the British residency, where they received surgical aid and always recovered. Those who survived the hæmorrhage after the operation and sought refuge in their homes, Dr. Campbell was told, frequently died from unrelieved vesical inflammation and urinary obstruction.

The following paper was read by Dr. Carter Blake :

The PRIMORDIAL INHABITANTS of MINAS GERAES, and the OCCUPATIONS of the PRESENT INHABITANTS. By Captain R. F. BURTON, F.R.G.S., H.B.M. Consul, Trieste.

THE following papers are translated from the meritorious labours of M. Henriquez Gerber upon "Minas Geraes," the great central province of Brazil. Such monographs are of double value to the student, firstly, because they are written by men who have thoroughly studied the subject; secondly, because they serve as a standard of comparison between the present and the past.

COMPARATIVE ANTHROPOLOGY (ETHNOLOGY).

M. Gerber begins this chapter with a resumé of the paper upon the autochthones or primordial inhabitants of Brazil, presented in 1842 to the "Instituto Historico-geographico"* of Rio de Janeiro by the distinguished naturalist Dr. P. Lund.

* Vols. 4 and 6. It is an abstract of his work "*Blik paa Brasiliens Dyreverden*," etc.

The *Homo Americanus* cannot be derived from the Mongolian. The narrowness and flatness of the cranium and facial angle, the prominence of the zygomatic bones, and the form of the maxillæ and the orbits give to the former a greater animality and thus show its inferiority.* Degeneracy will not explain community of origin. Firstly, the world proceeds from the imperfect to the perfect, and such retrogression is contrary to the course of nature. Secondly, if this hypothesis were true, the older the type the greater should be the physical resemblance between the races; but the calvariæ of Lagôa Santa prove the contrary.

The discovery of human bones of both sexes, entirely preserved and partially petrified, in fact, truly fossil bones, mixed with those of gigantic and extinct animals, suffices to prove the antiquity of man in Brazil. The skulls show all the cranio-logical characteristics of the modern "Red race," especially the extraordinary depression of the coronal region, which in some specimens almost entirely disappears. On the other hand, the incisors are remarkable for having a plane and tritulating superficies instead of a transversal cutting edge; this peculiarity is not found in any existing race, and only in the mummies of ancient Egypt. The similarity of the stone hatchets and implements of Brazil† with those of Europe, and the analogies of the Mexican monuments with those of Hindostan and Egypt, are undeniable points of contact between the early inhabitants of both hemispheres.‡

"We see then," concludes Dr. Lund, "that America was already peopled before the first ray of history had beamed upon the horizon of the old world, and that the oldest types belong to the same race which inhabited the continent at the epoch of its discovery."

The actual population of Minas, as of all Brazil, is composed of three elements, viz.—American, improperly called

* So in some ancient Mexican monuments the cranium retreats above the superciliary crests. This is supposed to be the work of art, but Dr. Lund has proved that upon the American continent there existed a race normally exhibiting the abnormal configuration.

† Dr. Lund found with the fossil bones a hemispherical piece of amphibole (hornblende), about ten inches in circumference, and smooth in the plane face, which served to bruise seeds or other hard substances.

‡ Here our author goes too fast. There is every reason to believe that in the most ancient ages Europeans and Asiatics were shipwrecked upon the eastern and western coasts of South America, and it is highly probable that these foreigners introduced the civilisation, of which curious remains existed at the time of the official discovery. Legends to this purport are found amongst all the tribes from Brazil to Peru. The stone implements were probably independent inventions, the offspring of necessity, and the similarity of form must arise from the similarity of men's brains. But such analogies will hardly justify the "ergo" which the author gives to Dr. Lund. The antiquity of the Brazilian would be the theoretical deduction from the early formation of his habitat.

“copper-coloured;” Caucasian, or white; Ethiopic, or black. The Portuguese family is the base of population, and upon it have reacted the two others in the ratio of their organisations, physical and moral, and in conformity with their numbers, power, and social position.

As in the United States the savage has retired before the advance of civilisation, the only remnants in Minas now hold the virgin forests of the River Doce and the Jequitinhonha. As usual, anthropologists divide them into two great different nations, which in the seventeenth century fought for the possession of the litoral.* These are the Tapuyas (Tapuias) and the Tupis.

The Tapuyas, driven from their ancient seats by the Tupis, a people coming from the south, took refuge in the far interior (Sertão) of Brazil. After some years sundry divisions of the former again appeared, under different names, upon the seaboard. Such, for instance, were the terrible Aimorés,† with the Abatiras and Potaxós, their confederates, now settled in the Serra des Aimorés, and the Goyatakazes, who hold lands in the actual municipalities of Campos and São Fidelis. This reaction would of course drive the Tupi family further to the south. The modern descendants from the Tapuyas are:—

1. The Machacalis, a small but agricultural and industrious tribe living on the Rebeirão dos Prates of the Jequitinhonha River (Aldeia or “Indian” village do Ferrancho).‡ Like those below, they are probably descended from the famous Aimorés.

2. Macunis and Malalis, whose remnants are settled (*aldeiados*) and cultivate the soil near the Alto dos Bois and the valley of the Upper Mucury. The Malalis are now reconciled to their ancient enemies, the

3. Botocudos, still the most powerful of the aboriginal natives, and which have hitherto resisted the exterminating wars of the Portuguese and attempts to civilize and domiciliate them. The true name was “Endgerekmung” (Captain Guido Marlière§

* This is clearly within the range of authentic history, which informs us that the wild men of America in that day, like the African savages of the present age, were always engaged in pushing their way to the sea-board. The negro’s object is to trade direct with the white man; the American probably sought a more amene climate and plentiful diet. These would tend to enervate him and thus prepare his destruction by a stronger race.

† I would rather believe, with the old authors from whom Southey borrowed his materials, that the Aimorés were a distinct nation from the Tapuyas and the Tupis. They come, it has been conjectured, from the neighbourhood of the Araucanians of Chili.

‡ Possibly for “Farrancho,” a medley of people.

§ Captain Guido Marlière (?) was a French officer in the local service who did much by kindness and consideration towards taming the savages of the Rio Doce. He is often mentioned by travellers of the last generation.

writes it "Crakmun"),* Botocudos meaning men with bungs in their lips, from the Portuguese "botoque." There are several tribes, some tamed, others wandering wild in the wooded valleys of the rivers Mucury, Doce, Tambacury, Urupucá, and others. They are all greatly inferior in intellect to the Machacalis and Malalis. The chief clans of this nation now domesticated are,

A. The Naknenuks (= hill men), a confederation settled in the valleys of the Upper Todos os Santos, Poté and Mucury; in the villages of Capitão Felipe, in the forest of São João; of Capitão Poté, on the banks of the Poté rivulet; and of Capitão Timotheo, near the head waters of the Todos os Santos.

B. The Pojichá tribes, settled three leagues below Philadelphia.

C. The Gíporok, on the banks of the lower Urucú and Mucury.

D. The Bakues, on the left bank of the Mucury.

E. The Aranans, on the banks of the Sorobim and Sassuhy rivers.

4. The Coroados, direct descendants of the Goyatakazes, whose last remnants are domesticated and mixed with the whites in the south-east of the province, as near Aldeia da Pedra, in that of Rio de Janeiro.

The descendants of the victorious Tupis are:—

1. The Puris,† once a powerful people, and deadly enemies of the Coroados. They are now reduced to a few families, mixed up with the gross of the population in the municipalities of Ubá, Muriahé, and Leopoldina.

2. The remnants of various tribes who, domesticated and thoroughly mingled with the actual population, still exist in some of the western municipalities. Such are the Bororós, originally from Mato Grosso, who in the middle of the seventeenth century were subdued by the Paulista Antonio Pires de Campos. He enabled them to resist their enemies, the Cayapós (Caiapós), by settling them in the villages of Sta. Anna, Lonhozo, near Uberaba, and Das Pedras, near the existing city of Bagagem. Remains of the Cayapós are still found in the extreme north-west of the province, on the banks of the Carunhanha and the Urucuia rivers, tributaries of the great Rio de São Francisco. The Araxás are settled about the modern Villa de Araxá, which borrowed from them a name.

It is impossible to obtain certain information concerning the present number of the Indians. The settled (*mansos*) are included in the general table of population, and M. Gerber is persuaded that the wild men do not exceed 8000 head.

* "Crak," in the language of the Botocudos, means iron.

† Also called Purus, and celebrated for atrocious cannibalism. The word means "man eater." They were found on the southern river till 1828.

The free population numbers, as a rule, four-fifths of the inhabitants.* This is also to be observed in other central provinces, whilst in Rio de Janeiro the cultivation of coffee and cane causes the servile almost to equal the free. The same is the case in the municipalities to the south-east of Minas, whence coffee is largely exported.

The following tables are based upon the interesting statistical labour which Major Ling Maria da Silva Pinto presented in 1855-6 to the Provincial Government, and the subsequent additions have been supplied by references to the respective authorities. The province of Minas had in the year

	Souls.	Increase.	
1776.....	319,769		according to Pizarro.
1786.....	394,040	.....2·1 per cent.	„ map of that year.
1821.....	514,797	.....0·8 per cent.	„ „
1823.....	563,671	.....4·7 per cent.	„ „
1847.....	908,816	.....2·0 per cent.	„ Silva Pinto.
1854.....	1,081,909	.....2·5 per cent.†	„ „
1856.....	1,219,272	.....6·1 per cent.	„ „

Thus during the eighty years between 1776 and 1856 the percentage of total increase was 1·70 per cent. per annum, and the absolute increase was 899,503.† It is difficult to explain the prodigious

* As the notes on climate (See Highlands of the Brazil) show, the temperature is not favourable to the negro; the land is too high, the air is too rarified; he finds white labour to compete with him, and, as a rule, he is not a favourite in the fishing and cattle-breeding countries. Hence of late years the slave population of Minas has not increased.

† Thus divided between 1854-61: Comarca of Villa Rica ... 78,618 souls.
 „ Sabará ... 99,576 „
 „ Rio das Mortes 82,781 „
 „ Serro Frio ... 58,794 „

‡ From 1776 to 1786 the average increase was 2·10 per cent. per annum; from 1786 to 1821 it was 0·80; from 1821 to 1823 it was 4·70; from 1823 to 1847 it was 2·00; from 1847 to 1854 it was 2·50; from 1854 to 1856 it was 6·10.

To these figures, given by M. Gerber, I would add a few taken from other authors.

In 1808 Baron von Eschwege made the population of Minas to represent 433,049 souls.

In 1813 the “Patriota,” quoted by Southey, gave 425,281 as the number of communicants in the diocese of Marianna, which then contained two-thirds of the provincial population.

In 1864 the “Almanak” of Minas gives 1,620,190.

In 1865 the Presidential Relatorio fixes it at 1,500,000, of whom one-third were slaves, to 20,000 square miles. This would be about 1·36th of the population ratio of France, and 1·50th of Holland.

In 1866 the Presidential Relatorio of the same year, gives as an approximation 1,620,190 souls. Also Lieutenant Eduardo José de Moraes offers the estimate of 1,500,000 souls; about one-sixth of the general population of the empire.

Thus, in that year the population of Brazil almost equalled that of the western states of North America in 1860. Ohio, Indiana, Illinois, Michigan,

advance made by the population between 1854 and 1856. Admitting, however, that between 1854 and 1861 the total increase was 10 per cent., and adding to this the colonists introduced by the companies “União e Industria” and “Mucury,” we may calculate for the year 1861 a population of nearly 1,192,000 souls.

OCCUPATIONS OF THE INHABITANTS.

Industry and Productions.

“S’il existe un pays,” says M. de St. Hilaire, “qui jamais puisse se passer du reste du monde, ce sera certainement la province des Mines.” Hitherto the dissemination of inhabitants over a vast tract of land, and the want of good roads, have interfered with the march of improvement. As usual when slaves co-exist with free men, the latter are prejudiced against agriculture, holding it to be a servile toil; and the sudden arrest of the import slave-trade threw back production to a considerable extent. As, however, numbers increase, and communication enlightens men’s minds, this aversion to an honourable occupation will vanish, and in due time the vast riches which lie in the bowels of the wealthy Mineiro soil, in the woods, and on the prairies, shall be turned to the use of mankind.

It is impossible to obtain exact statistics touching the number of men employed in the various branches of labour. We shall not, however, be far from the truth when, of the whole male population of free adults above eighteen years of age, we give 2 per cent. to the scientific and liberal professions, civil, military, and ecclesiastical, including also the employés of Government, 9 per cent. to mining industry, 11 per cent. to various manufactures, 26 per cent. to commerce and to the transport of goods, and 52 per cent. to agriculture and stock-breeding.

TITLES TO LAND.

Though by far the greater part of the province is uncultivated, the land is private property, and common lands (*terras devolutas*) are limited to the virgin forests and wild neighbourhood of the rivers Doce, Mucury, and others in the cantons (*Camarças*) of Jequitinhonha, Indaiá, and Paraná. The titles to these lands were acquired either by settling upon them (*per posse*, squatting) or by donation charters (*Cartas de Sesmaria*), or it was granted in

Wisconsin, Minnesota, Iowa, Kansas, and Missouri, then numbered 9,141,390 souls, including, however, only 115,619 serviles. It exceeded that of the southern states. Texas, Louisiana, Arkansas, Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, and Tennessee, numbered in 1860, a total of 7,649,660, of whom 4,574,429 were free, and 3,075,231 were slaves.

certain portions (*concedida em datas*), especially in mines, by the governors of Rio de Janeiro, São Paulo, Goyaz, and Bahia, before Minas Geraes rose to be a province.

In the old times grants of land were very unequal, ranging from a minimum of 60 square braças* to a maximum of 48 square leagues. The area of the whole province is thus distributed:—

Charters (Sesmarias), in square leagues of $\frac{1}{20} = 1^\circ$	5911
Grants (datas) given by the governors	2500
Squatting and arbitrary possession	9000
Common lands and those occupied by the Indians	2589

Total square leagues . . 20,000

MINES.

The province derives its name from the gold and diamond washings which in early days occupied the greater part of the population. This industry has fallen off during the last forty years, when wages and rations began to have a higher value. Moreover, "pick and pan" can be no longer used, and expensive processes of extraction must take their place.† Besides diamonds, precious stones of different kinds, and gold, the only minerals now worked are iron, lime, and saltpetre.

Diamonds were discovered by Sebastião Leme do Prado, on the Ribeiro Manso, a tributary of the Jequitinhonha, in 1725, a little after the first gold-diggings were opened in the north of the province. They were not recognised as valuable till 1728, when the Netherlands consul at Lisbon saw a parcel brought there on trial by Bernardo da Fonseca Lobo. A royal letter of February 8, 1730, authorised the then governor, D. Lourenço de Almeida, to declare the diamonds crown property, and to demand from the washers a poll-tax of 5 \$ 000, which was afterwards gradually raised to 230 \$ 000 per annum — in those days a large sum. Another royal letter of October 30, 1733, established a superintendent of diamonds, and marked out as the "Diamantine District," a territory about 10 miles in diameter, circling the village (*Arraial*‡) of Tejuco, now the "Cidade Diamantina." In 1735 the Government monopolised the diggings, and farmed

* There are 300 braças to the usual league, which would reduce 5911 square leagues to 4257 leagues of $1/20^{\text{th}} = 1^\circ$. D. João VI was the first who allowed strangers to hold sesmarias.

† Reichenstein's dry system of gold extraction by chlorine is, I believe, still unknown to Minas.

‡ In old Portuguese this Arabic corruption means a royal camp—head quarters. The original establishments in Minas Geraes took the name probably on account of their military organisation, and the necessity of fortifying stations against the "Indians."

them to João Fernandes de Oliveira for a yearly sum of 120,000 \$ 000, and after 1740 for 138,000 \$ 000. In January 1749 the privilege was conferred till 1753 upon Felisberto Caldeira Brant, and the latter was succeeded by the same Oliveira from 1753 to 1771. From January 1, 1772 the Government took the works into their own hands, until the law of October 25, 1832 threw them open to the public, establishing a certain tax. The law of September 24, 1845 created a new inspector-generalship of the Diamantine lands.

The quantity extracted has been considerable. In 1732 the fleet of Rio de Janeiro carried 1146 ounces to Lisbon. In the days of the contractors they sometimes washed more than 12,000 oitavas* (each = 55·351,340 gr. avoir.) per annum. Between 1772 and 1794 the figures show 48,547 oitavas, besides 440,825 $\frac{3}{4}$ octaves of gold simultaneously washed. Baron von Eschwege (*Pluto Brasiliensis*, p. 418) calculates from official documents that between 1730 and 1822 the extraction was registered at 165,760 $\frac{3}{4}$ oitavas, besides the clandestine workings, which produced at least an equal quantity.

Diamonds are also found in other parts of the province, as in the southern watershed of the Serro Frio, the Serra de Grão Mogol, and principally in the streams flowing from the Serra da Mata da Corda. From one of these, the Abaeté, came in 1800 the "Regent" diamond of the Portuguese crown, then valued at 7500 millions of francs. About twelve years ago (1863) appeared in the municipality of Patrocínio, a large diamond digging. Here was presently built the village called "Bagagem Diamantina," which already in 1854 had 2815 hearths (fogos),† with 13,554 souls. In 1856 it was raised to the rank of a town (*Villa*), and it is now one of the most prosperous cities in the province. Amongst a number of valuable stones drawn from these grounds was the Estrella do Sul, weighing 18 oitavas, and now valued at £250,000.‡

There are actually in the province six inspectorships of diamond districts, namely, at Diamantina, Serro, Conceição, Grão Mogol, Patrocínio, and Uberaba, created by the decree No. 665 of September 6, 1852, which carried out with some changes the resolution No. 374 of September 24, 1845. Each district is divided into lots, which are farmed out. The price of stones, at the "Regulation of the Vintem,"§ is from 440 \$ 000 to 480 \$ 000 per octave (now nearly doubled).

* The oitava is about 17·44 carats.

† A truly archaic form of census, borrowed from the "Indians," who thus mustered their braves.

‡ The author might safely have added another cipher.

§ The vintem is the unity of measure = 2 grains, or half a carat. The "regulation of the vintem" means that every stone in the octave should average a vintem, or half a carat.

Besides diamonds, the province has produced the euclase, the chrysolite,* the aqua-marinha or beryl, the garnet, and especially the (white) topaz. All are however at present neglected on account of the low prices in the markets of Europe. The aqua-marinha (beryl) weighing 15 lbs., and presented in 1806 to D. João VI., was found in the Ribeirão dos Pingos, a tributary of the Mucury River. The so-called "diamonds" found (1861) in the River Matipóó, in the district of Abre Campo, were chrysolites, euclases, amethysts, topazes and other stones.

Gold was discovered in 1672 by Manoel da Borba Gato† upon the lands of Sabará. The "find" becoming public, hosts of adventurers, especially Paulistas, flocked to the lands lying near the range which runs north of the Stacohemi. In 1699 Antonio Dias, of Taubaté, found the rich diggings of Ouro Preto. Important settlements sprang up, and as population increased arose the troubles known as the Guerra dos Emboabas,* between the Paulistas and the Portuguese from Europe. These disturbances were at last put down in 1709 by the governor, D. Antonio d'Albuquerque Coelho de Carvalho. From that time the quinto, or fifth, due to the royal treasury, was carefully collected, and superintendentships of gold and smelting houses (*casas de fundição*—gold foundries†) were established in Villa Rica, Sabará,

* The ancient chrysolite was called topaz, from the eagerness with which it was sought (*τοπαζειν*) in an island of the Red Sea (Pliny, 37-8). The topaz in Minas is generally yellow, turning red when heated, and positively electric on one side whilst the other is negative. According to Mr. Walsh, the "topaz of Germany becomes white by a similar process, proving that the colouring matter of both is different." (Vol. ii, p. 188).

† The Almanak (1865) declares it proved by ancient documents that only in 1700 gold was discovered by Borba Gato, on the banks of the Rio das Velhas. But in 1573, a certain Sebastião Fernandes Tourinho washed the precious metal in the Sertão da Casca, an Indian village where the modern Cuiethé (Cuyeté) is. Also in 1693 Antonio Rodriguez Arzão, of Taubaté, found gold at Cuiethé, and showed three octaves to the Capitão Mór of Espírito Santo. Borba Gato, after sundry murders, fled to the Rio Doce; between 1695 and 1705 he was pardoned by the governor, Arthur de Sà e Menezes, on condition of his showing the "faisqueiras" or washings of the Rio das Velhas.

‡ The Portuguese called the white Brazilians "Caboclo," *i. e.*, scraped, peeled, because the red men removed beards and eyebrows. The Paulistas retorted with "emboaba," poultry feathered to the feet, alluding to the breeches and hose of their rivals. This word is now forgotten, whilst *caboclo* is the general term for a cross with the red blood, as opposed to Bugre (lit. slave), a pure "Indian" in his wild state.

§ Each had a staff of fifteen or sixteen officers, assayers, smelters or founders, and writers. From the liberal measures of D. João VI, who permitted foreigners to expend capital in mines, resulted four decrees of the Imperial Government, two for Minas Geraes, and two for Mato Grosso. These orders granted concessions enabling strangers to possess mines and lands in Brazil, not only during the life-time of the grantees, but also during the existence of the companies. A decree of August 12th, 1825, restricted this to a term of twenty years. Mr. Edward Oxenford was the earliest concessionist in Minas Geraes. (Walsh, ii, 116).

and the towns subsequently built. Innumerable mines were afterwards discovered in different parts of the province. At present the precious ore is brought principally from the municipalities of Sabará, Caethé, Sta. Barbara, Marianna, Ouro Preto,* Itabira do Mato-dentro, Conceição, Serro, Diamantina, Grão Mogol, Minas Novas, and S. José d'El Rei.

According to authentic calculations, the total of the royal quint between 1700 and 1820 was 29,235,405 octaves = $7137\frac{1}{2}$ arrobas (each = lbs. 32·3876). Calculating the octave at its then price of 1 \$ 500, the tribute to the Portuguese crown was £4,400,000 (= 114 millions of francs), and that which left the country, including the contraband, was £25,000,000 (= 700 millions of francs). Since the Declaration of Independence the production has greatly fallen off.†

The gold-crushing works in the province are about 100. The most important of them, and the largest industrial establishment is the "St. John d'El Rey Mining Company," at Morro Velho, $2\frac{1}{2}$ leagues from Sabará. Established in 1830, it worked for some time near the city of S. João d'El Rei, and then began upon the present lands. The auriferous veins (*betas*) are pyrites injected into argillaceous schiste, and dipping to the south-east 45° . According to the director's reports, Morro Velho extracted during 1861 96,612 tons of mineral. Of these, 24,710 were rejected as poor, and the remaining 71,902 gave 499,064 octaves of gold = 6·94 octaves per ton. Adding to this the 26,690 octaves given by the "refuse works" (*engenhos da praia*), we have a total of 525,754 octaves, the greatest annual benefit then known. Between March 20, 1861, and March 20, 1862, were extracted 543,637 octaves, bearing a clear profit of £96,769 0s. 6d. and the dividend was ninety shillings per share of £20 (£15 paid up). During that year the mines employed 486 male slaves, 311 Brazilian, and 52 English workmen. In the mills (*engenhos*) were fourteen Europeans, 50 Brazilians, 96 male and 357 female slaves, a total of 1366 souls.

The principal mines explored at Morro Velho are those called the Cachoeira and the Bahú. The former was 1120 palms long in the horizontal section, 13 to 85 palms broad, and 1190 palms deep in March 1861, which became 1480 in February 1862.

* "Black Gold," where, according to Mr. Walsh, the precious ore has an alloy of silver, which oxidises by exposure. But iron, pure and degraded from mica slate, almost always accompanies gold in these diggings, and the oxide is found sufficient to tarnish the precious metal.

† Between 1832 and 1860 an improved system of working gave only six arrobas. According to the geography of Sr. Pompêo, between 1720 and 1820, the imperfect working gave 146,000,000 of oitavas (= 30,647 arrobas of gold). During that time Mato Grosso, Goyaz and S. Paulo together produced only 72,000,000 of octaves (= 17,647 arrobas).

The Bahú is about the same size.* Both have six inclined planes for hauling out and transporting the ore. In 1859 the mine employed 274 free Brazilians and foreigners, and 407 slaves, a total of 681 men. Amongst these were 242 borers (broqueiros), who in 311 working days extracted 89,000 tons of metal; 6119 tons were rejected as poor, and the remaining 82,881 were crushed in six stamping-mills and machines, worked by 134 hands. In the spalling works, the mills, and the amalgamation departments, during this year, were employed 9 Europeans, 21 male Brazilians, 24 women ditto, with 79 male and 254 female slaves, a total of 387. For a mining population the work-people are extraordinarily healthy. In 1859 the percentage of deaths was 2·76, and not including accidents only 2·14.

The average yield per ton was 3·9 octaves† = 215·9 grains. To each pounded ton, 70 lbs of mercury was employed, and the loss per cubic foot of amalgam was 0·58 ounces, about equal to 6 per cent.

In 1859 the total produce was 342,885 octaves, at an expense of 115,808\$067, that is to say, 0\$357 per octave. The capital of the shares paid up since 1830 was £128,400, which in thirty years (to 1860) produced a net revenue of £466,874 6s. 1d., besides which the works were valued at £100,000. The last dividend was £2 per share of £15—nearly 14 per cent.

The “Associação Nacional Brasileira de Mineração” (Cocaes Company) has explored since 1829 the mines of Macaubas, Cuiabá, and Cocaes. It has, however, been unfortunate, and its capital of 3,600,000\$000 (£360,000) was exhausted without giving a dividend. During the thirty-one years of its existence it extracted gold to the value of £150,000. Its only mills now employ 12 hands, whilst in the mines 21 free people and 21 slaves compose the total. In 1860 its expenses rose to 9,000\$000 (£900), and it hardly returned 693½ octaves of gold.

All the other establishments are upon a small scale. The ancient companies of S. José d’El Rei, Prados, Gongo Socco, Itabira do Campo, and others, have ceased to exist.‡

* In December 31st, 1866, the Bahú mine had 207 fathoms on the dip of the lode, and a length of excavation of 50 fathoms; in the Cachoeira these figures were 246 and 66. The average breadth of the Bahú was 44 feet, of the Cachoeira 29 feet; the minimum was 11 feet and the maximum 90 feet. There were 6 to 7 inclined planes.

† In 1829 Mr. Walsh calculated that a cubic foot of dirt (= 110 lbs.) gave 3 to 8½ oz. of gold. At Morro Velho, in 1866 the yield had reached 9 to 10 oitavas per ton. The amalgamation was at the ratio of 1·60th of mercury per ton ore, and the loss was half an ounce per cubic foot of amalgam. The total produce of extraction in 1866 was 625,654 oitavas. The expense of extracting it was 4s. 6d. per ton treated, and 2s. 6d. and 3s. 8d. per ton received from the mine. The cost of extracting the gold was 228 reis to 5¼d. per oitava.

‡ Those of Marianna and Passagem had not begun when the author wrote.

Platina,* silver, copper, and lead. All these are now neglected. Platina is found mixed with gold in many mines belonging to the municipalities of Marianna and Do Serro. Lead, generally argentiferous, exists in the vicinity of Sete Lagoas, Abaieté, and other places; and the Government does not work the rich galeniferous ores of Abaieté. Copper exists abundantly in various parts of the municipalities of Sta. Barbara, Serro, Sabará, and Indaiá. At one time it was highly thought of.

Iron is scattered over the whole province, and should be one of its chief exports. It was first extracted in the beginning of the present century by Manoel Ferreira da Camara Bitancourt. The works actually in use are now above 90, and are limited to the cantons of Ouro Preto, Piracicava, and Serro. The principle is that of M. Jean Antoine Monlevade, a few leagues to the south of Itabira de Mato-dentro, which in 1863 employed 96 slaves, and which annually produces 6000 arrobas of worked iron. There are others in the western municipalities, as Piumhy and Patrocínio, and between Ouro Preto and the city of Itabira the works employ about 2000 hands, and produce annually some 150,000 arrobas. None of these cast their metal with high-chimneyed air furnaces (*Fornalhas altas*), but make bars or worked iron in the "Stück-ofen" or Catalonian forge.† The combustible is charcoal.

Limestone is quarried in many parts of the province, and there is a quantity of marble for which some day use will be found.

Salt and saltpetre. The first effervesces from the ground in the municipality of Januaria, on the banks of the Rio de São Francisco: it also appears on the banks of the River Mosquito, in the arrondissement of Grão Mogol. Saltpetre in considerable quantities penetrates into the clay strata. The municipalities of Santa Luzia, Montes Claros, Piumhy, and Formiga supply the greatest quantity.‡

Besides these minerals there are large deposits of building-stone, clay fit for tiles, bricks, pottery, and even porcelain; true kaolin, in the municipality of Marianna; steatite (vulg. called Pedra de Sabão = soapstone), well fitted for pots; slate, plumbagine (plumbago, carburet of iron), for pencils and crucibles (*cadinhos*); pumice; sulphate of iron, popularly known as "Caparrosa," and ochres of different colours.

* According to some travellers palladium and tellurium (?) have extensively been mistaken for platina.

† It is the rudest possible contrivance; yet with the aid of charcoal fuel it turns out iron which equals, and has even excelled, English steel.

‡ There is an immense importation of salt into this province. Sabará alone (14 leagues from the capital) takes, per annum, 30,000 bags, each of 30 kilos. The value is there 7 \$ 000 per bag; but it gradually rises at Curvello and the Barra do Rio das Velhas to 16 dollars.

AGRICULTURE—STOCK-BREEDING.

Agriculture, which might embrace the produce of the temperate and the tropical zones, is now confined to the produce consumed by the country, such as the cereals—maize, rice, wheat,* and rye—the latter two in very trifling quantities; fruits, as bananas, limes and sweet limes, peaches, jaboticabas, pineapples, quinces, guavas, etc.; vegetables, as beans, manioc, sweet potatoes, and yams; with coffee, tobacco, cotton, and Palma Christi. The vine and indigo are also cultivated, but to a very small extent.

Pigs, goats, and the minor domestic animals are found all over the country; the black cattle, mules, and horses are bred most in the campos or prairies of the west; sheep are few, although the plains offer good pastures. Apiculture progresses, but the utilisation of the silkworm is still in embryo.

Most of this produce is bred for consumption in the province, and thus the commerce is almost exclusively internal. The price and difficulty of transport prevent exportation. The yearly value of provisions here produced may be £5,000,000. Only the southern municipalities, whose communications are better, can afford to export, and the articles are usually those that combine lightness and value. Such are

1. Coffee, which flourishes chiefly in the municipalities of the Rio Preto, Parabybuna, Mar de Hespanha, and Leopoldina; less in those of Pomba, Ubá, and Muriahé. The total production, home consumption included, rises to a mean annual average of 1,300,000 arrobas.†

2. Tobacco, of which the best is grown in the municipalities of Baependy, Campanha, Christina, Itajubá, Lavras, and Pitangui. The annual produce may be 400,000 arrobas, of which the province exports about 250,000.

3. Cotton was formerly the chief of Mineiro products, and was much cultivated in Minas Novas; it then declined to the wants of home consumption of 60,000-70,000 arrobas, of which about 23,000 are exported in woven stuffs strong and good.

4. Cane was also grown in many places for sugar and spirits. It is mostly consumed at home, and the exportation of sugar and hard brown cakes (*rapaduras*) hardly reaches 100,000-170,000 arrobas per annum.

* We are told that in 1829 several Comarcas grew considerable quantities of wheat. It was the same in the southern part of the old S. Paulo Province, now Paraná.

† The general average of the annual export of the province is as follows: coffee and tobacco 16,000,000 kilogrammes; maize, beans, rice, and farinha, 6000 litres; worked cotton 2500 metres; black cattle 150,000 (in 1861, 136,500) head; poultry about the same; cheeses 500,000; charcuterie 3,000,000 kilogrammes; 7000 sets of saddles, harness, etc.; hides, raw and prepared, both in considerable numbers.

5. Black cattle is best bred in the Prairie municipalities to the north and west of the Serra da Mantiqueira. These places send annually to the capital (a Côte) about 70,000 head.

6. Sheep form an annual exportation of 15,000 head.

7. Pigs are bred in great numbers, pork being a favourite food. The number annually fattened is nearly 4,000,000, of which 50,000-80,000 head may be exported, with 250,000 arrobas of lard (*toucinho*).

The number of agricultural and breeding establishments in the province exceeds 20,000.

COLONISATION.

There are three great nuclei of colonies, besides a number of foreign labourers, chiefly from the Açores Islands, who are scattered over the properties in the southern municipalities, viz.:—

1. Colony of Mucury. The Mucury Company (having opened a road from Santa-Clara, the terminus of steam navigation on the River Mucury, and the village of Philadelphia, founded by the same body) began in 1854 a colony for Brazilians and strangers. The first German detachments arrived in 1856, but a variety of difficulties, endemic disease, and discontent arrested progress. In the middle of 1859 the colony counted 591 souls, not including minors of five years, and the total population of the Philadelphia district was valued at 3500 souls. The land is of 154 lots of 150,000 square fathoms, measured, marked out, and sold to the colonists—42 lots of 4000 square fathoms* for country houses (*chacaras*), and 172 of 5000 for houses in the village of Philadelphia. It possesses 12 sugar-works, 10 mills, 50 crushers (*monjolos*) for making manioc-meal (*farinha*), 5 smithies, and 2 cart-making establishments. The annual production, which, however, is all consumed by the colonists, is valued at £20,000. Another unprosperous colony, "Nueva Milano," was established by an Italian, M. Monteggia, under the auspices of the same company, on the banks of the Ribeirão de S. Matheos, three leagues below Santa Clara.

The Imperial Government, in virtue of the contract dated March 1, 1861, took over charge from the Mucury Company, and proceeded to make many improvements. The colony now numbers 487 souls.

2. Military colony of the Urucú. It was created by Imperial Decree of May 24, 1854, with the especial object of protecting the new settlers in the woods of the Mucury River, and it was planted at the confluence of the streams Urucú and Das Lages. The *personnel* numbered hardly a major director, 4 officers, and 26 privates (*praças*), till May 10, 1855, when it was reinforced

* These were "Aforado," i. e., hired from the Camara.

with 28 families from Madeira, each receiving 40,000 square fathoms of land. It actually contains 288 persons, of whom 113 are Portuguese, 94 Belgians and Swiss, and 81 Brazilians. Of 793½ alqueires* of cultivable land in the colony, about 91¼ are planted with produce of the country.†

3. Colony of D. Pedro Segundo. It was founded with assistance from Government by the "Company União e Industria" on July 12 1858, when the first German colonists arrived. Early in 1860 it contained 1112 souls, and early in 1861, 1144. In 1861 11 died, 44 were born, and 6 came from Europe; thus early in 1862 the colony contained 1183 persons—654 males 529 females. These figures, however, include 250 who, with or without permission of the directory, are absent from the colony. There are 200 farms (*prados*) of 20,000 square fathoms each, and half of them are planted with cereals and other food for country consumption. At the same time 123 families and 8 unmarried men were occupied in cultivating their grants (*prazos*); 60 persons were simultaneously working at the roads of the colony, 180 were in different works of the company, and 28 persons were in private service. In 1861 the company paid the colonist labourers for various works 142,413\$839 (= £14,200). In the same year the supplies, native and foreign, furnished to the colony amounted to 20,356\$840 (= £200‡).

MANUFACTURES AND FABRICS.

These, for want of hands, are at present necessarily in a backward state. The following are the principal branches, viz. :—

1. Preparations of vegetable and animal substances, as coffee, cane (for sugar and spirits), tobacco, indigo (on a very small scale), castor oil, sweets, and quince jams (*marmaladas*), "Indian" (*i.e.*, Chinese) tea, Paraguay tea (*congonghas* or *mate*), manioc-flour, maize-meal (*fuba*), and sediment flour of manioc

* Each alqueire is = 10,000 braças (Brazilian fathoms), usually set down at six acres, English.

† In 1864, according to the Provincial Relatorio, it was directed by the ex-ensign Pedro Viegas de Menezes, who commanded five soldiers. The population was represented by 356 souls, of whom the colonists proper were 165 Portuguese, 97 Dutch, 25 Brazilians, 13 Chinese, 11 Belgians, and 11 Germans, total 322. Of these 178 were males, and the rest females; 11 were widows and widowers, and 191 unmarried, including 172 minors, of whom 5 were orphans. The colony is purely agricultural, and supplies coffee and cotton, tobacco and especially sugar cane, of which rum and rapadura bricks are made. The rest is composed of maize and manioc, rice, beans, and sweet potatoes.

‡ Since the latter part of 1867 this colony has greatly improved, and has received considerable additions. Like the rest, however, it is established upon a wrong system, a kind of sickly exotic nurture being made to take the place of the healthy natural growth. In a future work, I shall revert to the wasteful, useless process of such immigration to the Brazil.

(*polvilho*) ; besides saw-woods, butter, cheese, bacon, etc. An approximative calculation gives us in the province 300 saweries, 4503 works for sugar-making and distillery, 250 coffee-milling establishments. Besides these there are many mills (*moinhos*), stamps (*monjolos*), and small works (*engenhocas*).

2. Mechanical arts and trades. Besides those which exist in all civilised lands, such as the callings of mason, carpenter, joiner, iron-smith, tailor, bootmaker, etc., the following deserve especial mention :—

(a.) Printing and small bookbinding establishments at Ouro Preto, Marianna, S. João d'El Rei, Diamantina, Tres Pontas, Campanha, and places of minor importance.

(b.) Fabrics of cotton and wool in all parts of the province, especially in the municipalities of Queluz, Bom Fim, Pitangui, Desemboque, Piumhy, Tamanduá, and others in that part. Mostly they are coarse stuffs, but there are finer striped textures like casimir, also horse or saddle-cloths (*mantas*) and coverlets or bedcovers (*colchas*), strongly made and of good design. The annual total of stuffs may, without fear, be estimated at 4,000,000 yards (*varas*), and 10,000 pieces of bedcovers. The most important manufactory is that called "Canna do Reino," in the municipality of Conceição ; it is aided by the government, and by the latest information it can turn out an annual total of 50,000 or 60,000 yards (*varas*).

(c.) Hats manufactured at S. Gonçalo da Campanha.

(d.) Ropes and a few stuffs manufactured with the fibres of the pita aloe, the Tuccum palm, the leaves of the Macaúba tree, etc.

(e.) Tanneries in the municipalities of Januaria, Paracatú, Uberaba, and others to the west.

(f.) Currieries and saddleries of the Cachoeira da Campo, Prados, Barbacena, S. João d'El Rei, and other places ; fabric of packsaddles (*cangalhas*) and ordinary horse furniture in all parts.

(g.) Goldsmitheries of Diamantina, formerly much famed and still distinguished by their purity of metal.

(h.) Forges and furnaces, lime-kilns and potteries, mentioned under the head of "mineralogy."

(i.) Images made at Santa Luzia, where figures are prettily cut in a very white steatite sent from Bahia ; the city annually exports a value of 60,000 \$ 000 (£6,000).

(k.) Pots and vases of steatite.

(l.) Potteries in the municipalities of Conceição, Caethé, and Marianna, all unimportant. The ancient works of "Saramenha,"

* The vara is a yard of 5 palms = 40 inches.

a place near Ouro Preto, which produced an excellent article, have been abandoned for years.

(*m.*) Soap, indigo, wax tapers, tallow candles, almost exclusively consumed at home.

(*n.*) Gunpowder made at Ouro Preto and S. Bartholomeu: rockets and fireworks everywhere.

(*o.*) Drugs for apothecaries' shops, of which there are in the province some two hundred and fifty.

(*p.*) Wooden boxes and bowls, mats, baskets, panniers (*jacás*).

DISCUSSION.

MR. CHARLES HAMILTON had listened to Captain Burton's valuable paper with great interest, and was very pleased to learn from it that the Captain did not hold out any hopes to the English agricultural labourers of obtaining any success in Brazil, as in his (Mr. Hamilton's) opinion it is about the worst country the English agriculturist could settle in.

Dr. CARTER BLAKE, referring to the description of human remains from a bone cave in Brazil (*Journal of the Anthropological Society of London*, vol. ii, p. cclxxv.), stated, in reply to Mr. Charlesworth, that he did not consider the attrition of the incisor teeth indicated a race character in the Brazilian aborigines.

The President announced that the auditors of the accounts of the Institute for 1872 had been appointed, viz., Mr. Clements R. Markham, C.B., on behalf of the Council, and Mr. Richard B. Martin, on behalf of the Members.

On the invitation of the President, Mr. Charles Hamilton made a brief statement relative to his proposed journey of exploration in Palestine.

The meeting then adjourned.

ANNIVERSARY MEETING.

JANUARY 21ST, 1873.

SIR JOHN LUBBOCK, Bart., F.R.S., *President, in the Chair.*

THE minutes of the last annual meeting were read and confirmed.

The Treasurer's Financial Statement of Income and Expenditure was read and adopted. (p. 424).

The President appointed as Scrutineers of the Ballot, Mr. McKenny Hughes and Major S. R. I. Owen, and declared the ballot to be then open.

The Report of Council for 1872 was then read by the Director, as follows :

SECOND ANNUAL REPORT *of the* COUNCIL OF THE ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND, *for* 1872.

1. Your Council report with satisfaction that during the year 1872 thirty-one valuable papers have been read before the Institute, as shown by the following list:—

1. The Adamites. By C. Staniland Wake, Esq.
2. Hereditary Transmission of Endowments. By George Harris, Esq., F.S.A.
3. On the Wallons. By Dr. Charnock and Dr. Blake.
4. Strictures on Darwinism. Part I. Fertility and Sterility. By H. H. Howorth, Esq.
5. Anthropological Collections from the Holy Land. Captain Burton and Dr. Blake.
6. Race Characteristics as related to Civilisation. By J. G. Avery, Esq.
7. On the Comparative Longevity of Man and Animals. By George Harris, Esq., F.S.A.
8. On the Physical Conditions of Centenarians. By Sir Duncan Gibb, Bart., M.D.
9. Notes upon the Hair, and some other Peculiarities of Oceanic Races. By Dr. Barnard Davis, F.R.S.
10. Notes on the Hair of a Hindustanee. By Dr. H. Blanc.
11. Notes on the Peculiarities of the Australian Cranium. By S. M. Bradley, Esq.
12. Notes upon a Scaphoid Skull. By Professor Calori and Dr. Barnard Davis.
13. Mann: its Names and their Origin. By J. M. Jeffcott, Esq.
14. Vocabulary of the Aboriginal Dialects of Queensland. By Mrs. H. Barlow.
15. On the Mode of Preparing the Dead among the Natives of Queensland. By A. McDonald, Esq.
16. On the Moral Irresponsibility resulting from Insanity. By George Harris, Esq., F.S.A.
17. On the Artificial Enlargement of the Ear-lobes in the East. By J. Park Harrison, Esq.
18. On Tumuli at Sapolia, Russia. By Baron de Bogushefsky.
19. On the Ogham Pillar Stones in Ireland. By Hodder M. Westropp, Esq.
20. The Hill Tribes of North Aracan. By R. F. St. Andrew St. John, Esq.
21. The Ainos of Yezo. By Commander H. C. St. John.
22. Indian Picture Writing in British Guiana. By C. B. Brown, Esq.
23. Australian Languages and Traditions. By Rev. W. Ridley, M.A.
24. Man and Ape. By C. Staniland Wake, Esq.
25. The Moabite Jars: with a Translation. By the Rev. Dunbar J. Heath, M.A.
26. On Human Remains from Iceland. By Captain Burton and Dr. Blake.
27. Report of Anthropology at the Meeting of the British Association. By Colonel Lane Fox.
28. On some Implements bearing Marks referable to Ownership, Tallies, and Gambling, from the Caves of Dordogne, France. By Professor T. Rupert Jones.

29. Discovery of a Flint Implement Station in Wishmoor Bottom, near Sandhurst. By Lieut. C. Cooper King, R.M.A.

30. The Origin of Serpent-Worship. By C. Staniland Wake, Esq.

31. The Gáro Hill Tribes. By Major Godwin-Austen.

2. In addition to these the Council have accepted for reading at the meetings in 1873 twenty papers, and four more are under consideration by the referees.

3. These statements indicate great scientific activity on the part of members of the Institute.

4. Your Council regret to announce the loss to the Society by death of the following twelve members :—Mr. Edward Arnold, Mr. J. W. Breeks, Mr. Henry Charlton, Sir Walter Clavering, Mr. C. H. Gardner, Mr. Peter Gardner, Mr. J. W. Jackson, Mr. R. H. Kirwan, Mr. John Mortimer, Dr. E. Riccard, Professor Scouler, Sir A. Smith.

5. Thirty-three members have retired, and twenty-two new members have been elected.

6. Mr. Letourneau, Conseiller d'Etat, Algiers, and Dr. J. Haast, of Canterbury, New Zealand, have been elected corresponding members.

7. Mr. H. H. Howorth has been appointed Local Secretary for South Lancashire, and the Rev. T. F. Falkner for Colombo.

8. The financial condition of the Institute has shown marked improvement during the year :—

9. A sum of £410 has been paid during the year off the old debts of the Anthropological and Ethnological Societies, leaving £437 13s. 5d. still due, to which must be added £20 for interest charged by Mr. Richards, as follows :—

To Richards on account of Anthropological Society (including interest)	£395	8	10
To Taylor and Francis on account of Ethnological Society	52	4	7
	<hr/>		
	£447	13	5
	<hr/>		

10. The other debts owing by the Institute on December 31st, were :—

To Richards for printing Journal	£328	12	6
To Kell Brothers, for illustrations to Journal	46	8	0
To Royal Society of Literature, for Rent	137	10	0
For Salaries due December 31st, but paid in 1873	40	0	0
	<hr/>		
	£552	10	6
	<hr/>		

11. Against this the following assets are available:—

Cash at Bankers	...	...	...	£153	7	4
Balance due from Longmans, for sale of Publications...				20	6	3
„ Trübner	„	„	„	45	5	7
„ Sotheby (for sale of surplus books)...				18	12	0
				£237	11	2

12. The net indebtedness of the Institute is therefore

And that of the two absorbed Societies	...	...	...	£314	19	4
				447	13	5

Making a total of	...	...	...	762	12	9
Which, as compared with the net indebtedness of 31st December, 1871	...	...	...	1012	2	3

Shows a saving in the year 1872 of	£249	9	6
------------------------------------	-----	-----	-----	------	---	---

14. It is satisfactory to your Council that they have been able to effect this saving without diminishing the value and interest of the Society's publications, upon which the following sums have been spent during the year:—

For Printing	...	...	...	£229	12	6
For Illustrations	...	...	...	111	3	3
				£340	15	9

15. Three numbers of the Journal (one a double number) have been issued during the year, containing the papers read before the Institute, with numerous illustrations, and some miscellaneous anthropological information.

16. The *Library* of the Institute, consisting of the combined libraries of the two absorbed societies, was found to contain many duplicate copies, and some works not of an anthropological character. Some of these were returned to the donors where they desired it, and the remainder have been sold by auction, producing, as before stated, £18 12s. net.

17. The *Museum* has been enriched by a large number of very valuable gifts, far exceeding the accommodation the Institute has at command for their exhibition. It has also been improved by the articulation and suspension in wooden cases of the aboriginal Tasmanian skeleton, presented by Mr. Morton Allport, and the gorilla skeleton, presented by Mr. Tom Craston.

18. The following are the names of the donors to the library and museum during the year:—

Capt. R. F. Burton; M. E. T. Hamy; James Burns, Esq.; Archæological

Society of Ireland; M. H. Schaaffhausen; M. Em. Alglave; M. Louis Agassiz; Paris Anthropological Society; Orleans County Society; Col. Chas. Whitteless; Bengal Asiatic Society; Phisico-ökonomische Societat; Vienna Academy; Liverpool Archæological Society; Royal University of Christianity; J. W. Jackson; Rev. W. W. Newbould; M. L. A. de Quatrefages; Association for the Promotion of Social Science; Editor of Psychological Medicine; Editor of Nature; The Manx Society; Royal Society; Daniel Wilson, Esq.; Editor of Food Journal; Canadian Institute; Imperiale Académie des Sciences de St. Petersburg; Royal Society of Literature; British Association for the Advancement of Science; Messrs. Street Brothers; Dr. Mantegazza; Imperial Commission of St. Petersburg; Royal Geographical Society; Dr. H. Beigel; American Academy of Arts and Sciences; Dr. J. W. Wyman; Eugene Morris, Esq.; Consul T. H. Hutchinson; Dr. J. Barnard Davis; Morton Allport, Esq.; T. S. Barrett, Esq.; Society of Antiquaries, London; Royal Asiatic Society of Great Britain and Ireland; Secretary of State for India; Messrs. Longman and Co.; Society of Antiquaries of Scotland; Professor A. Ecker; Royal United Service Institution; W. Winwood Reade, Esq.; Dr. C. C. Abbott; W. S. Dallas, Esq.; Royal Institution of Cornwall; W. Webster, Esq.; Dr. Paul Broca; Vienna Anthropological Society; Impériale Société des Naturalistes de Moscow; G. W. Rusden, Esq.; The Earl of Kimberley; H. M. Westropp, Esq.; John Evans, Esq.; Théodore Weckinako; Literary and Philosophical Society of Liverpool; Dr. Paul Topinard; Dr. Thomas Stratton; London Library; Com. R. J. Morrison, R.N.; Philosophical Society of Glasgow; Lion Vanderkindre; Philip Phœbus, Esq.; W. Besant, Esq.; Isidor Copernicki; Leeds Philosophical Society; Governor Rawson, C.B.; Dr. Edward Jarvis; Dr. Pius Melia; Chas. Darwin, Esq.; Dr. W. D. Whitney; Dr. Paul Bataillard; Joseph Bonomi, Esq.; A. W. Franks, Esq.

19. Your Council were gratified to receive from that of the Royal Geographical Society an invitation to co-operate with them in their application to Government for a renewed expedition to explore the Arctic seas. The Council was satisfied that great advantage to anthropological science might be anticipated from such an exploration. It is to be regretted that the Government have not seen their way to comply with the request made to them, but your Council will not fail to use any opportunity that may arise for renewing the application.

20. Your Council have observed with satisfaction that a grant of money has been made, and a committee appointed (consisting mainly of prominent members of your Council), by the British Association for the Advancement of Science, to prepare and publish a set of anthropological instructions to travellers and explorers in uncivilised countries. Your Council have requested the Committee to report to them upon any means by which this Institute could properly and usefully co-operate with the Association in this important work—one which the Institute has had in view from its formation.

22. Your Council trust the members will consider that they have not been wanting in activity during the past year. It must be borne in mind, however, that the Institute cannot expect to attain its full measure of usefulness while it continues burdened with debt. That debt is fast diminishing, and when

a few years have elapsed may be expected to be wholly extinguished. That object achieved, the Institute has before it a career of prosperity and usefulness second to none even among the most ancient and most highly privileged of scientific societies.

On the motion of Professor Rolleston, seconded by Mr. Boyd Dawkins, the Report was adopted *nem. con.*

Mr. E. Charlesworth and Mr. Robert Des Ruffières made a few remarks.

The PRESIDENT then delivered the following address:

GENTLEMEN.—The report which has just been read gives you a clear, though succinct, account of our position as a Society, and of the work we have done during the past year. We may, I think, fairly congratulate ourselves on the result. Our financial position is rapidly improving, and I am happy to say that we have a good prospect of interesting papers for the present session.

During the past year Mr. Evans has published his long looked for volume on "The Ancient Stone Implements, Weapons, and Ornaments of Great Britain"; an excellent work, well worthy of the high reputation of our distinguished Vice-President. The first chapter is introductory; the second deals with the modes of manufacture; he then describes successively the chipped or rough hewn celts, celts ground at the edge only, polished celts, picks, chisels, gouges, perforated axes, perforated and grooved hammers, grinding stones, whetstones, flakes, nuclei, scrapers, awls, knives, javelin and arrowheads, flaking tools, sling stones and balls, articles of bone, spindle-whorls, buttons, &c. The descriptions are clear and interesting, and are illustrated by two plates and nearly 500 woodcuts.

Mr. Evans sums up the present state of our knowledge of the Neolithic, or Polished Stone age, as follows (p. 423): "These results, I must acknowledge, are to my mind, by no means completely satisfactory. It is true that regarding the various forms of objects described from a technological, or even a collector's point of view, the series of stone antiquities found in Britain does not contrast unfavourably with that from any other country.

We have hatchets, adzes, chisels, borers, scrapers and tools of various kinds ; and know both how they were made and how they were used ; we have battle-axes, lances and arrows for war, or for the chase ; we have various implements and utensils adapted for domestic use ; we have the personal ornaments of our remote predecessors, and know something of their methods of sepulture, and of their funeral customs. Indeed, so far as external appliances are concerned, they are almost as fully represented as would be those of any existing savage nation by the researches of a painstaking traveller. And yet, when we attempt any chronological arrangement of the various forms, we find ourselves almost immediately at fault. From the number of objects found we may, indeed, safely infer that they represent the lapse of no inconsiderable interval of time, but how great we know not ; nor, in most cases can we say, with any approach to certainty, whether a given object belongs to the commencement, middle, or close of the Polished Stone Period of Britain."

The last four chapters are devoted to the Palæolithic period. He first describes the evidence derived from caverns, on the general results of which he thinks we may safely rely. In the case of Kent's Hole, for instance, we find "the refuse of his food, in the shape of the bones of the animals whose flesh he consumed, or the shells of the edible molluscs with which his meals were varied. We have seen that in the black mould above the stalagmite, the implements of bronze and stone are associated with a fauna essentially the same as that of the present day. But the bulk of the mammals which are found above the stalagmite do not occur below it ; and assuming, as we must do, that the earlier occupants of the cave subsisted on animal food, and were unable to eat the whole of the bones as well as the flesh, some portion of the bones below the stalagmite must be the refuse from their meals. Without insisting on the perfect contemporaneity of all the animal remains found together in the cave-earth, we may, therefore, safely affirm that we have here relics of man associated with a fauna from which the ordinary forms of ox, sheep, goat, pig, and dog are entirely absent, and of which the majority of forms are now either totally or locally extinct." (p. 464.)

As regards the physical geography of the country in Palæolithic times, Mr. Evans attaches much importance to the probable saturation of the strata, which saturation, as he points out, would be more readily effected at that time than it is now, because the present deep valleys tend to drain the neighbouring uplands. Since in Palæolithic times the valleys were comparatively shallow, he thinks that such strata as the chalk may have been always in a state of saturation to within a few feet of the surface. He points out, moreover, that were the chalk in a less porous condition, its absorbent powers would not be so great. Under such circumstances floods would necessarily be more frequent and more severe than at present. Moreover, "with a bare surface such as a newly elevated tract would expose" (p. 581), the eroding power of rain would be much greater than at present. In consequence also of the more rigorous climate, snow and ice would accumulate during the winter, thus producing violent spring floods. We may, therefore, he says, "readily suppose that in the course of no very great interval of time, geologically speaking, a river system for carrying off the waters falling from the heavens, analogous in character to those of the present day, but with shallower valleys, would be formed on the surface of the elevated tract." (p. 581.)

Measured in years, however, the changes which have taken place since the appearance of man in western Europe indicate an immense lapse of time. Mr. Evans, indeed, considers that the evidence of man's existence in Miocene times is "very far from satisfactory." (p. 426.) Yet the antiquity of man, measured in years, must be very great, and the changes in physical geography which have taken place since his appearance have been immense. To realise, says Mr. Evans, "these changes, almost transcends the powers of the imagination. Who, for instance, standing on the edge of the lofty cliff at Bournemouth, and gazing over the wide expanse of waters between the present shore and a line connecting the Needles on the one hand, and the Ballard Down Foreland on the other, can fully comprehend how immensely remote was the epoch when what is now that vast bay was high and dry land, and a long range of chalk downs, 600 feet above the sea, bounded the horizon on the south? And yet this must have been the sight

that met the eyes of those primeval men who frequented the banks of that ancient river, which buried their handiworks in gravels that now cap the cliffs, and of the course of which so strange but indubitable a memorial subsists in what has now become the Solent Sea." (p. 621.)

M. Belgrand, "Inspecteur Général des Ponts et Chaussées, Directeur des Eaux et des Egouts de la Ville de Paris," has published a very important work entitled "*Le Bassin Parisien aux âges anté-historiques*," illustrated by maps and by more than eighty plates, for the most part palæontological. M. Belgrand's official position has enabled him to study the physical conditions of the Seine and its affluents under very favourable conditions, and his work will no doubt be read with great satisfaction by those who are interested in the subject. Without denying that the present condition of the country is due in great measure to the slow operation of existing causes, M. Belgrand is of opinion that the creation of the valleys, in the first instance, is due to cataclysmic action, which he places at the close of the Pliocene period. "*Je partage*," he says, "*l'opinion de M. Elie de Beaumont ; je crois que le soulèvement des Alpes s'est fait rapidement, et que c'est à ce grand cataclysme qu'il faut attribuer le déplacement d'eau qui a raviné le bassin de la Seine.*" (p. xxxix.) The direction of this current was from the south-east to the north-west, and he adds that, "*il me paraît absolument impossible d'expliquer autrement les grands traits de cette orographie.*"

During Palæolithic times the continent was, he considers, less elevated than at present, and the rivers much larger. The diminution in the size of the rivers must, he thinks, have taken place very rapidly: "*les grands cours d'eau de l'âge de pierre sont devenus tout à coup les petites rivières que nous voyons couler de nos jours.*" (p. 138.) This, in his opinion, is proved by the fact that the river valleys of the Seine and of Picardy are in their lower parts occupied by beds of peat. Now peat does not grow in turbid, muddy water. Thus there is no peat in the valley of the Marne, because owing to the impermeable nature of a part of its course, it is subject to violent floods of muddy water. The Seine valley contains much peat down to Montereau; here, however, it is joined by the Yonne, which

receives the waters from the impermeable district of the Morvan, and for some distance below this point, no peat occurs. The floods in Palaeolithic times were so violent, that the water became muddy in all cases. Hence no peat was then formed. The growth of peat characterises the present régime. But if the change from the large rivers of Palaeolithic times to the comparatively small streams of to-day had been gradual, M. Belgrand argues that the valleys would have been filled, not with peat, but with gravel sand and alluvium.

The magnitude of the floods in Palaeolithic times as compared with those of to-day, may be accounted for without any such great geographical or meteorological changes as might at first be supposed necessary. M. Belgrand devotes a very interesting section to this subject. It is clear that areas drained by the rivers were not essentially different from the present. This is proved by the fact that the gravel and sand contain no foreign elements; they are always composed of materials derived, or which might have been derived, from the upper parts of the river course. The areas of drainage, therefore, were approximately the same as at present. In discussing this problem M. Belgrand calls particular attention to the fact that the greatest modern floods have not been accompanied by an excessive rainfall. Thus the greatest flood in the Seine during the nineteenth century was that of January 2nd, 1802. Speaking of this, Mr. Brasle, to whom we are indebted for our knowledge of the facts, remarks with surprise that there had been no snow, and that the rain had not been excessive. The explanation is that the floods of the various affluents are generally successive, but if on any occasion they become simultaneous, the result is much more serious than might have been expected from the rainfall. For instance, in the great flood of September 24th, 1866, "on a calculé que l'Armançon, à Aisy, ne débitait pas moins de 800 mètres cubes par seconde. On ne peut guère évaluer à moins de 500 mètres les débits séparés du Serein à Guillon, de la Cure à Saint-Père, de l'Yonne à Clamecy. Ces quatre rivières, dont les versants n'ont ensemble que 3,511 kilomètres carrés de superficie, débitaient donc ensemble environ 2,300 mètres cubes d'eau par seconde, tandis que la Seine, à

Paris, dont le bassin n'a pas moins de 43,270 mètres carrés, n'a débité, au maximum de la même crue, que 1,250 mètres cubes environ par seconde." (p. 120.)

The explanation is that the floods of these four rivers passed Paris successively, and before those of the more distant affluents. In the case of the Loire the floods of the upper affluents reach the lower parts of the river six or seven days after those of the nearer streams.

Under existing circumstances a vast amount of water percolates through the soil, and returning through the springs, mitigates the intensity of the floods while prolonging their duration. But, says M. Belgrand, agreeing on this point with Mr. Evans, "dans l'âge de la pierre, les pluies étaient tellement abondantes, que leurs eaux ruisselaient à la surface des terrains les plus perméables. Il résultait de là que la première partie de la crue de Paris, celle qui est due aux terrains imperméables, était considérablement augmentée, et que la deuxième partie, due aux eaux de sources, était aussi beaucoup plus grande, puisque, les eaux ruisselant à la surface du sol, les sources étaient alimentées, autant qu'elles pouvaient l'être, l'absorption des eaux pluviales dans les terrains perméables étant alors au maximum" (p. 122). In pp. 134-5, M. Belgrand gives some interesting diagrams, clearly showing that the floods of rivers which drain impermeable areas are much shorter and more violent than those which run on permeable strata. In the case of the Seine the impermeable strata occupy 19,390 square metres, the permeable no less than 59,210. When once, therefore, the latter were rendered impermeable, as he supposes to have been the case in Palæolithic times, whether by saturation or any other cause, the total impermeable area, that which mainly supplies flood water, would be raised to 78,600 feet, that is to say, would be four times as large as at present.

M. Belgrand assumes that this would arise from the fact that the permeable strata would have been thoroughly saturated; perhaps it would rather depend on the circumstance that, owing to the greater severity of the climate, the soil would often be frozen. We must, however, by no means assume that we know the limits which floods can reach even under existing circum-

stances; the period during which they have been recorded is, of course, very short compared with that of the Palæolithic age, and as M. Belgrand points out, if during the floods of September 1866, the rain had persevered for only two days more, the floods of all the Seine affluents would have overlapped, and the passage of water would have been four times greater than any on record. While, however, I am disposed to admit from meteorological considerations that the rainfall during the glacial epoch was probably greater than at present, that floods were more frequent and severe, I do not think we have any direct proof that the rivers were on an average much larger than they are now.

As regards the antiquity of man, M. Belgrand considers that his existence in Miocene times is clearly demonstrated, relying on the lower jaw of a rhinoceros discovered by M. Laussedat in Auvergne. It was found in a bed belonging to the close of the Eocene, or beginning of the Miocene, and bears traces of incisions which, in his opinion, can only have been made by man.

As regards the number of flint implements found in certain spots, as for instance, by M. Boucher de Perthes in the valley of the Somme, and by Mr. John Frere (whom by a singular error he calls MM. John frères), at Hoxne, he points out that bones, etc., would naturally tend to accumulate at certain spots, where the bodies of drowned animals would be stranded; that they are scarce where valleys are straight, numerous where they are curved, especially on the convex side of the bends. As to the spots where flint implements are so abundant, he considers that these were manufactories, the savages frequenting certain places in the dry bed of the river, where they could find suitable flints in abundance.

In the "*Archiv für Anthropologie*" M. Schmidt has published a careful criticism on the cases in which human remains have been said to have been found in America, in association with the remains of the mammoth, mastodon, and other extinct mammalia. The greater number of these are, he considers, quite unsatisfactory. The human skeleton said to have been found in the rock on which the citadel of Quebec is built, and to be in the museum of that city, is a myth; no such skeleton exists, and the credulity with which this story has been received

by some writers is the more remarkable on account of the great geological antiquity of the rock in which the skeleton is said to have been discovered. The two cases recorded by Koch in which arrows, etc., were found in association with mastodon remains, are also quite untenable. As regards the New Orleans skull, said to have been found under four layers of cypress roots, at a depth of sixteen feet, and to which Dr. Dowler has attributed an antiquity of no less than 50,000 years; M. Schmidt comes to the conclusion that the case is not proven. He points out that in the original account given by Dr. Drake, this skull is not said to have been found directly under, but only near to, the cypress roots; and that even assuming the circumstances to have been accurately recorded, they do not involve so great an antiquity as that claimed by Dr. Dowler.

The Florida case, considered by Agassiz to indicate an antiquity of 10,000 years, he dismisses very briefly, since the discoverer, Count Pourtalès, has himself pointed out that Professor Agassiz was mistaken in supposing that the remains were discovered in an ancient coral reef. On the contrary, they were found in freshwater sandstone on the shore of Lake Monroe.

There are, however, five cases on record which, in M. Schmidt's opinion, go far to establish the antiquity of man in America, and his contemporaneity with the mastodon. The first of these is the skull found at Rock Bluff, on the Illinois river, northwest of Jacksonville, about 100 feet above the river bed. It does not materially differ from the existing type of the Dacotah Indians, though the muscular impressions are unusually marked, and the supraciliary ridges are very prominent, whereas they are generally but little developed in American skulls.

According to M. Meigs it was found in June 1866, in a fissure of the rock, which was "three feet wide, was filled with the drift material of this region, consisting of clay, sand, and broken stone, the whole being covered with a stratum of surface soil. In this bed, which had apparently been undisturbed since the deposit, was found the skull under consideration, at the depth of three feet." *

The next case is that of the human bone found by Dr. Dicke-

* Rep. of Reg. of Smith's Inst., 1867, p. 412.

son in the neighbourhood of Natchez. Sir C. Lyell considered that this bone might have been derived from an Indian grave. M. Schmidt, however, lays stress on the fact that in hardness, colour, and weight, the specimen in question resembles the remains of the megalonyx with which it was found, and differs from ordinary Indian bones. He sees no reason to doubt its great antiquity.

M. Schmidt attaches also much importance to the skull, said to have been obtained in 1866 by a Mr. Matson from a shaft sunk on a mining claim in Calaveras County, California. Mr. Matson states that it was found at a depth of about 130 feet in a bed of gravel, above which were four beds of consolidated volcanic ash, known locally as lava.

Mr. Whitney was at the time satisfied that the skull really came from the position assigned to it by Mr. Matson.* Assuming this to be the case it would establish the presence of man in America prior to the cessation of volcanic activity in these regions, and contemporaneously with the mammoth and the mastodon. The thickness of the superjacent strata would also indicate a great antiquity, but there are grave doubts whether the skull is really ancient; Mr. Bret Harte, in "The Heathen Chinees, and other Poems," even asserts that it is really the skull of a negro miner named Bowers. I have been assured, on good authority, that Mr. Whitney himself has changed his opinion; on the other hand, the "*Revue d'Anthropologie*" (vol. i, p. 761) contains a letter, unfortunately without a date, in which he still maintains the antiquity of the skull in question.

The last case to which I shall refer is that of the shell implement found by Dr. Rijgersma in a bone breccia from the Island of Anguilla, and the discovery by Professor Holmes of human bones and pottery in a layer of dark clay, forming part of the bluff of the Ashley river, near Charleston, in association with remains of the mastodon, mammoth, etc., and on the whole he concludes that the contemporaneity of man in America with the mammoth and mastodon may be regarded as being satisfactorily established.

* Proc. Cal. Acad. Nat. Sci. iii, 277, quoted in "*Sullivan's Journal*," 1867, p. 265.

Mr. Baldwin* has published an introduction to North American Archæology, under the title of "Ancient America, or Notes on American Archæology." He does not, indeed, enter into the subjects treated by Dr. Schmidt in the memoir just referred to; but devotes himself principally to the mound builders, and the remarkable monuments of Mexico, Central America and Peru. Nor can I quit the subject of North American Archæology without referring to Mr. Abbott's memoir on the stone age in New Jersey.† Mr. Abbott gives descriptions and figures of the principal varieties of stone implements found in his locality, and I can testify to the accuracy of both as he has been good enough to send me a large number of specimens illustrating the principal types.

Mr. Boyd Dawkins has contributed to the "Geological Journal" an interesting paper on the Classification of the Pleistocene Strata of Britain and the Continent by means of the Mammalia.‡ He divides the pleistocene deposits into three groups:—

"1. That in which the pleistocene immigrants had begun to disturb the pliocene mammalia, but had not yet supplanted the more southern animals. No arctic mammalia had as yet arrived. To this belongs the forest bed of Norfolk and Suffolk, and the deposit at St. Prest, near Chartres.

"2. That in which the characteristic pliocene cervidæ had disappeared. The even-toed ruminants are principally represented by the stag, the Irish elk, the roe, bison and urus. *Elephas meridionalis* and *rhinoceros etruscus* had retreated to the south. To this group belong the brick-earths of the lower valley of the Thames, the river deposit at Clacton, the cave of Baume, in the Jura, and a river deposit in Auvergne.

"3. The third division is that in which the true arctic mammalia were among the chief inhabitants of the region, and to it belong most of the ossiferous caves and river deposits in middle and northern Europe."

As regards the association of northern forms with such animals

* "Ancient America, or Notes on American Archæology."

† "The Stone Age in New Jersey," by C. C. Abbott. Reprinted from the "American Naturalist," v. vi.

‡ "Geol. Jour.," 1872, p. 410.

as, for instance, the hippopotamus, he rejects the view which Mr. Geikie and I have advanced, that the one group occupied the country during a cold and the other during a hot period: in other words, that the swinging to and fro of the animal life depended upon secular and not on seasonal changes: on the ground that "if this be true, we ought to find the animals in two distinct suites, corresponding to these changes of long duration."* But though these changes may be called long in one sense, they are really very short when regarded from a geological point of view, and the river gravels with their contents were probably deposited and removed several times before they arrived at their present resting places.

Mr. Boyd Dawkins considers that during the pliocene period the mammalia of Asia were prevented from spreading into Europe by a northern prolongation of the Caspian along the low lying valley of the river Obi. The pleistocene mammalia of Europe fall, in fact, into three groups; those which occupied our continent in pliocene times, those which immigrated into it from northern Asia, and those which spread north from Africa. Had not the animals which lived in Europe during the pliocene age been insulated by some physical barrier from the Asiatic forms, the latter would occur in our pliocene strata as well as the former, and the mammoth and mastodon would have been associated in Europe as they are in America. The animals of northern Asia, however, could not pass westwards until "the elevation of the sea bottom between the Caspian Sea and the southern portion of the Urals." Until this time the lemming, musk-sheep, mammoth, stag, reindeer, musk-shrew, brown and grizzly bears, roe, etc., had not formed part of the European fauna.

The same number of the "Geological Journal" contains an interesting paper by Colonel Lane Fox, on the discovery of palæolithic flint implements in association with *elephas primigenius* in the gravels of the Thames valley, near Acton; as well as an appendix by Mr. Busk on the animal remains.

Under the title of *Nænia Cornubiæ*, Mr. Borlase has collected together the scattered notices of the primitive sepulchral monuments of his native county, and has added the results of his

* *Loc. cit.*, p. 431.

own researches. "Barrows and cairns," however, as he himself observes, "are by no means the most fruitful field for Cornish antiquities. Tin stream-works, and the sites of ancient mines and smelting-houses, have been always the most productive sources of objects of interest to the Cornish antiquary; and a paper of considerable length and no little interest might be written on the subject of the implements, weapons and ornaments of the ancient miners of the West"; and I hope, therefore, that Mr. Borlase may be induced himself to undertake the work which he has sketched out.

Dr. Gerland has brought out the sixth volume of Waitz's *Anthropology*, which deals with the Polynesians, Melanesians, Australians and Tasmanians, describing their physical condition, clothing, ornaments, food, canoes, customs, character, poetry, family life, laws, religion, etc. It is an interesting and most laborious work, and should be in the hands of all students of *Anthropology*.

These are but few of the works devoted to our science which have appeared during the past year. Indeed, the literature increases daily.

The various periodicals connected with our science contain an immense number of valuable memoirs, and we have to congratulate ourselves on the establishment in Paris of the "*Revue d'Anthropologie*", edited by Dr. Paul Broca. Under his able guidance the *Revue* cannot fail to be most valuable. Three numbers have appeared, all of which are full of interest. The first two contain, besides smaller communications, short reviews and a bibliography, a memoir by Dr. Broca himself, entitled "*Recherches sur l'indice nasal*"; "*Recherches sur les proportions du bras et de l'avant-bras aux différents âges de la vie*", by Dr. Hamy; a memoir on New Caledonian skulls, by Dr. Bestillon; "*L'Homme fossile de Denise*", by Dr. Sauvage; and an excellent memoir on the Mincopies by M. de Quatrefages, who is, I think, disposed to rank them too high, especially in regard to their family relations. He observes, for instance, that they have a person whose special duty it is to watch over the behaviour of the unmarried girls; quoting as his authority the following passage from Mr. Day, which, however, as it seems to me, he has misunderstood on this point. Mr. Day's words are:

"The marriage ceremony is simple ; a man about sixteen or eighteen is engaged to a girl of thirteen or fifteen belonging to a different family, with the consent of the girl's guardian, who is generally the chief of the tribe. On the marriage-day they are seated apart from the others, and pass their time in staring at one another. As the shades of evening set in, the girl's guardian advances, and taking the hands of the pair joins them together; they then retire into the jungles, where they pass their honeymoon."*

Here it seems evident that by the girl's guardian, Mr. Day did not mean any special functionary, as supposed by M. de Quatrefages, but merely her father, elder brother, or whoever was entitled to dispose of her in marriage.

The third number is also full of interest. I will only mention Dr. Broca's paper "*Sur la classification et la nomenclature craniologiques d'après les indices céphaliques.*" M. Broca adheres to his own classification, which is as follows:—

	Cephalic index.
Dolichocephalic . . .	75 and less.
Subdolichocephalic . . .	75·01 to 77·77.
Mesaticephalic . . .	77·78 to 80.
Subbrachycephalic . . .	80·01 to 83·33.
Brachycephalic . . .	83·33 and upwards.

and gives his reasons for preferring this system to those proposed by Huxley,† Thurnam,‡ and Welcker.§

In my address last year, I called attention to the continued destruction of prehistoric remains, and mentioned that, in conjunction with other gentlemen who are interested in the subject, I was engaged in the preparation of a Bill for the better preservation of these national monuments. The Bill is now ready ; it has been submitted to and approved by the Council of the Society of Antiquaries of England, the Society of Antiquaries of Scotland, and of the Royal Irish Academy for Ireland, as well as various other learned Societies, occupied with such subjects,

* Day. Proc. As. Soc. Bengal, 1870, p. 160.

† "Prehistoric Remains of Caithness," 1866.

‡ On the two principal forms of Ancient British and Gaulish Skulls, Mem. Anthropol. Soc." vol. i.

§ "Kraniologische Mittheilungen," Archiv für Anthropologie, 1866.

and it will be introduced as soon as Parliament meets. As there seems to be a general wish throughout the country to take some adequate steps for the preservation of these ancient monuments and graves of our forefathers, I am not without hope that the Bill may meet with a favourable reception.

It only now remains for me, gentlemen, to resign the position which I have had the honour of holding for the last two years. I beg to thank the Institute for the honour which they have thus conferred upon me, and for the support I have on all occasions received from the members. I wish the Society a long, useful, and prosperous career.

Dr. Beddoe moved, and Dr. Langdon Brown seconded, that the best thanks of the meeting be given to the President for his Address, and that it be printed in the Journal of the Institute.

The PRESIDENT returned thanks.

The Scrutineers of the ballot then brought up their Report, and declared that the Officers and Council to serve for 1873 were elected, viz. :

President.—Professor George Busk, F.R.S.

Vice-Presidents.—John Beddoe, Esq., M.D.; J. Barnard Davis, Esq., M.D., F.R.S.; John Evans, Esq., F.R.S.; Colonel A. Lane Fox, F.S.A.; Professor Huxley, F.R.S.; Sir John Lubbock, Bart., F.R.S.

Director.—E. W. Brabrook, Esq., F.S.A.

Treasurer.—J. W. Flower, Esq., F.G.S.

Council.—H. G. Bohn, Esq., F.R.G.S.; Captain R. F. Burton; A. Campbell, Esq., M.D.; Hyde Clarke, Esq.; W. Boyd Dawkins, Esq., F.R.S.; Professor P. M. Duncan, M.D., F.R.S.; Robert Dunn, Esq., F.R.C.S.; David Forbes, Esq., F.R.S.; A. W. Franks, Esq., M.A.; Francis Galton, Esq., F.R.S.; C. R. Markham, Esq., C.B.; Captain Sherard Osborn, C.B., R.N.; Captain Bedford Pim, R.N.; F. G. H. Price, Esq., F.G.S.; J. E. Price, Esq., F.S.A.; F. W. Rudler, Esq., F.G.S.; C. Robert Des Ruffières, Esq., F.R.S.L.; W. Spottiswoode, Esq., V.P.R.S.; E. Burnet Tylor, Esq., F.R.S.; A. R. Wallace, Esq., F.L.S.

Professor Huxley moved

“That the best thanks of the members of the Institute be voted to Sir John Lubbock, Bart., the President for two years, now retiring.”

Mr. David Forbes, F.R.S., seconded the motion, which was carried unanimously.

On the motion of the President, seconded by Mr. Hindmarsh, the thanks of the meeting were voted to the retiring members of Council.

A vote of thanks was also passed to Mr. Brabrook for his services as Director.

Thanks were voted to the Auditors for their labours, and to the Scrutineers for their report of the ballot, and the proceedings terminated.



ANTHROPOLOGICAL MISCELLANEA.

The EXPRESSION of the EMOTIONS in MAN and ANIMALS. By CHARLES DARWIN, M.A., F.R.S., etc. With Photographic and other Illustrations. London: Murray, 1872.

A WORK from the pen of Mr. Darwin on any subject connected with natural history, will always command attention, however it may fail to make a convert of the reader to the peculiar theory which the author advocates in regard to the descent of our race from the animal kingdom. Independent, however, of the truth of the theory in question, there is sufficient of real value and of intense interest in every production which emanates from Mr. Darwin, to ensure its being acceptable to every intelligent mind, whether naturalist, anthropologist, or only a searcher after general knowledge.

The book before us may be viewed in three distinct lights: 1. As an argument in continuation of that contained in Mr. Darwin's other works, in support of what is now generally known as the Darwinian theory. 2. As a treatise on certain points in natural history. 3. As an exposition of a very important branch of art.

The main argument which the author endeavours to adduce from the facts which he has collected together in the present volume is, that as man is wont to manifest so many exhibitions of emotions and passions in various ways, closely resembling those exerted by animals on corresponding occasions and from corresponding causes, it may reasonably be inferred that animals have not only much in common, but that man must almost necessarily be descended from some member of the animal kingdom.

We prefer, however, giving a summary of the writer's argument in his own words; when he states that "the study of the theory of expression confirms, to a certain limited extent, the conclusion that man is derived from some lower animal form, and supports the belief of the specific or subspecific unity of the several races," p. 367.

Illustrations in support of his theory are afforded in different parts of his work. Thus, in the case of fear, he observes "With regard to the involuntary bristling of the hair, we have good reason to believe that in the case of animals this action, however it may have originated, serves, together with certain voluntary movements, to make them appear terrible to their enemies; and as the same involuntary and voluntary actions are performed by animals nearly related to man, we are led to believe that man has retained, through inheritance, a relic of them, now become useless," p. 308. So also as regards the

means of intercourse, both between men and animals, we are told that "the power of communication between the members of the same tribe by means of language, has been of paramount importance in the development of man ; and the force of language is much aided by the expressive movements of the face and body. We perceive this at once when we converse on an important subject with any person whose face is concealed," p. 355. The expression of rage in the case of man, is thus traced to its exhibition in the animal creation : "Our early [animal] progenitors when enraged would probably have exposed their teeth more freely than does man, even when giving full vent to his rage, as with the insane. We may also feel almost certain that they would have protruded their lips when sulky or disappointed in a greater degree than is the case with our own children, or even with the children of existing savage races," p. 363.

Lavater, in his "*Physiognomy*," traced out the similarity as regards the type of form in each, between the faces of certain men and certain animals, which he illustrated by plates ; and further contended that those men who are adorned with countenances which resemble particular animals, partake largely of the nature of those animals ; thus contributing to establish the affinity between the nature of man and that of animals in some respects, perhaps even further than Mr. Darwin has done ; if, indeed, Lavater did not thus, to a certain extent, supply the missing link which has been so frequently said to be wanting in order to connect the two species together.

White, too, in his "*Gradation of Man and Animals*," established the general and gradual gradation both in men and animals, and between the different species of each. He tells us that "the hint that suggested this investigation was taken from Mr. John Hunter, who had a number of skulls which he placed upon a table in a regular series, first showing the human skull, with its varieties in the European, the Asiatic, the American, and the African ; then proceeding to the skull of the monkey, and so on to that of a dog, in order to demonstrate the gradation both in the skulls and in the upper and lower jaws," p. 41.

We have thus endeavoured, as fairly as we could, allowing for the narrow limits to which our space extends, and as favourably to Mr. Darwin as it appeared that we were warranted in doing, to present before our readers what seemed to us to be the leading points in support of his theory ; as regards which, although supported with all the ingenuity, all the eloquence, and all the information which Mr. Darwin has so abundantly at command, most of his readers will, we believe, conclude that, although like our friend "the claimant," he may be said, to a certain extent, to have made out a very fair case, yet there are certain essential links to be supplied, and certain facts to be got over, without which it is impossible to carry conviction.

Viewed merely as a treatise on natural history, we believe that it will be difficult to over estimate the value of the work before us. It treats, indeed, not only on natural history, but upon that branch of it

which is at once the highest, the most difficult, and the most important. Not merely the physical structure, but the instinctive endowments and impulses of the animal race are here investigated, and the penetration and discrimination of the author have effected valuable service in bringing much to light, which was previously in obscurity. To a certain extent, perhaps, we may regret that his work has been *tethered*, if we may use the expression, by his particular theory, and by his desire to make every fact contribute to the support of that theory, instead of discussing the subject of natural history free from prejudice, and with a desire only to arrive at the simple truth. He, in fact, appears as an advocate, when he should have assumed the judicial character. Be this as it may, the work is of essential value as a contribution to natural history, and is highly serviceable to the study of anthropology also.

Considering Mr. Darwin's book as an exposition of a very important branch of art, the expression of the emotions, we are inclined to attach to it very high value. This department of the arts is, moreover, one which is not only of great consequence, but it is one which has been much neglected by our artists, and which we trust that Mr. Darwin's work may essentially contribute to remedy. The ancients understood these matters better than we do; in proof of which we may appeal to the Greek statues of animals in the Vatican, as also to the paintings by Rubens, Sneyders, and Rembrandt, in which animal passion is very forcibly depicted. Indeed, a member of the Anthropological Institute, Mr. G. Harris, some time ago, in his "Theory of the Arts,"* devoted some pages to the consideration of this very subject, and urged its importance as connected with the study of art, pointing out how, from the expression both of emotion and passion exhibited by animals, much may be learnt, alike as regards truth and force in exhibiting that of man. The ancient poets, too, more especially Homer and Virgil, in their descriptions of violent passion and emotion in man, were wont to institute comparisons with animals when similarly excited.

Mr. Darwin's work is enriched with photographic and other illustrations throughout, which make it at once fully intelligible to the general reader, and highly serviceable to artists. On the whole, however we may differ from the author on many points, we feel bound to pronounce his book as one of sterling value, as well as of deep interest, and without which the library of no man of scientific acquirements, or of profundity as a naturalist, can be considered to be complete.

THE HAMATH INSCRIPTIONS.

SIR,—Mr. Hyde Clarke's speculations as to the origin and analogies of the Hamath character o/o are ingenious, but I much fear that they will lead to little practical result. This would, in my opinion, be better attained by seeking for a modern key to the Hamath inscriptions, than even by comparing them with the ancient cuneiform or

hieroglyphic characters. I shall, indeed, be surprised to find that those inscriptions have any such antiquity as Mr. Hyde Clarke ascribes to them, seeing that the o/o on which he lays so much stress, and several other of the Hamath forms are yet used by a North African race. At least such I judge to be the case from the description of the Tuarick written character, given in the introduction to "Denham and Clapperton's Travels in Northern and Central Africa." Of the eighteen signs there given, it appears to me that at least half may be traced in the Hamath inscriptions, among them being o/o (Yigh). It is noticeable that "on almost every stone in places they [the Tuaricks] frequent, the Tuarick characters are hewn out. It matters nothing whether the letters are written from the right to the left, or *vice versa*, or written horizontally." This description answers almost exactly to that of the characters in the Hamath inscriptions, in which, moreover, there appears to be much difference, in the actual formation of the figures employed.

Yours obediently,

C. STANILAND WAKE.

To the Editor of the Journal of the Anthropological Institute.

A COLONY OF HEATHENS.

SIR,—In spending large sums of money every year in sending missionaries to foreign countries for the conversion of the heathen abroad, we are very apt to forget our own heathen at home. A reiteration of the statement that there are heathens in London would fail to excite any surprise. But when I assert that within twenty-four hours' ride of the "Great City," there are heathens proper—that is, *bond jide idol worshippers*—it may startle not a few of the pious people who keep on good terms with their conscience by annually sending their mites to some missionary fund for the conversion of the Chickaboo Islanders. I must confess that it is by no means comfortable, after boasting for generations to all the world of our civilisation and Christianity, to suddenly discover that in our very midst is a race of barbarians, who, lacking the knowledge of the true God, fall down and worship a wooden image. But however startling it may be, I assert that it is positively true.

Off the West Coast of Ireland, in lat. 54° 8' N., and long. 10° 12' W., are two islands known as Inishkea, north and south. The word is Irish, and signifies "Inish," an island, "Kea," a thorn bush. So that the name suggests that at some remote period thorn-bushes were found there, though I observed, during my recent visit, that the thorn-bush was conspicuous by its absence. With the exception of one hill called Knocknaskea, the islands are perfectly flat. The islanders are ruled by "a king," who is said to be upwards of a hundred years of age. While having my doubts on this point, I am bound to say that his majesty is particularly hoary, and has certainly passed the allotted three-score years and ten. He is a most agreeable monarch, and is much beloved by his subjects. He has no suite, or palatial residence, and his revenue consists of a small per-centage of

the fish caught and the potatoes grown. The habitations are mere hollow heaps of stone, plastered over with mud, and thatched with rushes and seaweed. In some of these wretched hovels as many as eight and ten persons herd together, with a goat or pig, and in many cases a cow sharing the accommodation with them.

But this description would not inaptly apply to many other parts of Ireland, and even in some of our agricultural districts the labourers are not much better off in the matter of housing. But here is something that will not apply, it is to be hoped, to any other part of her Majesty's dominions.

The religion of these islanders is confined to the worship of a large wooden idol. This is no exaggerated figure of the Virgin Mary, but a rudely carved image of a man, about eight feet high, dressed in a long flannel gown. I could not ascertain that they have any particular home for the god, and there seemed to be a general desire on the part of the natives to preserve a strict silence with respect to his saintship. It was only after repeated solicitation that I was permitted to visit the place where the idol is kept—a hut, somewhat larger than the surrounding ones, and which is used by the natives as a place of worship. Owing to the situation of the islands they are exposed to the full force of the Atlantic gales, and at such times the inhabitants are unable to pursue their avocation of fishing, and in consequence suffer great privations. The idol is then, amid many lamentations, brought down to the shore, and invoked to still the storm, the natives at the same time prostrating themselves on the sand. Should the gale cease, it is attributed, of course, to the interference of the idol; but if, on the other hand, no abatement takes place, it is the god's will, and so he is sorrowfully but reverently carried back to his domicile.

These poor people hold very little communication with the outer world, and they have a tradition that they are the descendants of a mighty giant, who with his wife came from a beautiful and fertile island of great extent, which was submerged by the Atlantic. They say that this island was a perfect Paradise; that gorgeous plumaged birds flitted about and made the air melodious with exquisite music, while flowers of the most brilliant hues bloomed perennially. They believe that the enchanted island will some day rise again in all its loveliness, and become the future home of the spirits of their departed friends.

The seals, which abound on the rocky parts of the shore, are regarded with profound veneration, and on no account could a native be induced to kill one, as they are said to be the souls of their departed friends. In the hut of the king is the skin of a large white seal, which I ascertained was piously treasured on account of having formerly been occupied by the soul of a maiden. The following is the legend related to me. Many years ago a beautiful young girl lived upon the island, and was the betrothed of a "dacent boy" by the name of Rooney. One day Rooney and his bride-elect were out fishing in a coracle, when a storm arose and the frail craft was cap-

sized. The terrified lover endeavoured to save his sweetheart in vain. Before sinking for the last time she bade him farewell, and said she should become a white seal and would sing to him. The broken-hearted Rooney swam ashore, but his reason had fled. For a long time he daily made a pilgrimage round the island in the hope of meeting his departed in the shape of a white seal; but his journeys were always fruitless. At length, one stormy winter night, when the wind howled across the island with terrific fury, Rooney started from his couch of rushes, and exclaimed, "Hark, I hear her singing—she calls me now," and before anyone could stop him, he had bounded off and was lost in the darkness. His friends were about to follow, when they were deterred by a plaintive voice, which in a low musical tone bade them stay. All night long they heard the voice chanting a melancholy lay, but when daylight broke it ceased. Then a search was made, and down on the sea-shore they found the dead body of Rooney with a dead white seal clasped to his breast. The souls of Rooney and his beloved had gone to the enchanted island.

In answer to inquiries I made with respect to the burial of their dead, I was informed that for three days the corpse is allowed to lie with its face exposed; and a light burning at its head. And during this time the wooden god is repeatedly supplicated to give the deceased a safe passage to the Paradisiacal island. At the end of the third day, the friends and relatives assemble at the hut, a procession is formed, and amid much weeping and wailing the remains are carried to the graveyard and there buried, stones from the seashore being piled in heaps to mark the spot.

Some two or three years ago, I believe a missionary went over to Inishkea to attempt the conversion of the heathens; but, like many of his class who have gone on similar errands to other parts of the world, he commenced his work by scoffing at and reviling the god they worshipped, forgetting that for generations the faith of these poor people had been placed in that senseless image; and that faith, when once placed, is too strong to be scoffed away. By adopting this course he very naturally failed in his object, and so incensed the natives that he narrowly escaped with his life. Since then nobody seems to have thought it worth while to attempt the conversion of these untutored islanders.

J. E. M.

From the "Echo," Nov. 23, 1872.

ARTIFICIALLY ENLARGED EAR-LOBES.

THE following supplemental matter has to be added to the paper on "Enlarged Ear-lobes," in the *Journal*, p. 198.

Among the Cypriote statues recently exhibited in London, two or three of archaic character were found to have plugs of considerable size inserted in the lobes of the ear.

Also, in the copies of the frescoes at Ajunta, now in the India Office, numerous figures are represented with enlarged ear-lobes—

some with rings inserted in them, others with pendant lobes without distending ornaments; their complexions vary in colour, from a bright brown to black. One of the principal personages has a string of large pearls, with four tags of pearls of a smaller size attached to them, pendant from the enlarged lobe of the right ear. In the left there is a ring of a blue colour, with square edges coloured white. The ring is inserted in the ear-lobe, and appears to be at least three inches in diameter; the colour of the skin of this figure is brown. Another principal personage (a rana or princess?) is also represented with enlarged ear-lobes, filled with large blue rings with white edges; her skin is a bright black. In Dr. Forbes Watson's portraits of existing races in India, the Coles, who inhabit the part of India in which Ajunta is situated, are represented with discs or plugs in their ears of a considerable size.

In the paper upon enlarged ear-lobes, above alluded to, it was stated that the custom did not appear to extend in the New World further north than Mexico. In "Moore's Voyages," however, a plate has since been met with, in which the natives of the coast of California are represented with long slits in their ears.

Large discs or plugs are still used by the following people:—

The original race in the Island of Formosa. (Mr. Franks).

The natives of the Island of Car Nicobar, on the east side of the Bay of Bengal. (Mr. Distant).

Some tribes on the Upper Amazon. (M. Markoy*).

The natives of the Mulgrave group. (La Perousse).

The islanders of Santa Cruz. (Choris†).

J. PARK HARRISON.

* "A Journey across South America."

† "Voyage pittoresque," by Louis Choris.

INDEX.

- A.
- Adams, Dr. Leith, on flints from Guernsey, 63
 Address of Sir John Lubbock, Bart., 429
 Agassiz, Prof., on the antiquity of man, 436
 Aïnos, the, of Yeso, 248
 Anniversary meeting, 423
 Anthropological collections from the Holy Land, 41
 ————— miscellanea, 114-136, 307-412, 443-448
 Anthropology, report on, at the British Association at Brighton, 350
 ————— general, papers on, 352, 353
 Aracan, the Hill Tribes of North, 233
 Arctic Committee, report of, 291
 Atlantean race, the, 127, 397
 Auditors for 1872, 423
 Australian languages, Queensland, 166
 ————— and traditions, 257; No. II, 275
 ————— races, by Dr. P. Topinard, 307
 ————— head, 311
 Avares, the, 114
 Avery, Mr. J. Gould, on race and civilisation, 63; reply, 66
- B.
- Ballot, result of the, 442
 Barlow, Mrs. Harriott, on Queensland dialects, 166
 Basque Race, the, 150, 157
 Beddoe, Dr. John, on the Wallons, 18; on the presidential address, 442
 Belgrand, M., on the Paris Basin, 432
 Biology, outlines of, 133
 Blake, Dr. C. Carter, on the Wallons, 10; on human remains from Siloam, 53; remains from Deir-es-Sinné, 54; from Marad, 54; from Shakhah, 55; from Yarbrud, 58, 60; on perforation of shark's teeth, 94; on the Hamath stones, 129; on ethnology of Belgium, 310; on a mummied Australian head, 311; on man and ape, 328; on human remains from Iceland, 344, 347; on serpent-worship, 387; on Brazil, 423
 Blanc, Dr. H., on the hair of a Hindustanee, 102
 Bogouschefskey, Baron de, on barrows of Kokotowi, 199
 Bonomi, Mr. J., on an instrument for measuring the human body, 180
 Borlase, Mr., on Cornish barrows, 440
 Brabrook, Mr. E. W., on moral irresponsibility, 188; on Ogham stones, 205; vote of thanks to, 442
 Bradley, Mr. S. M., on the Australian cranium, 137
 British Association at Brighton, report on anthropology at the, 350
 Broca, Dr., on the colour of hair, 19; sur la déformation Toulousaine du Crâne, 134
 Brown, Mr. Charles B., on Indian picture writing in British Guiana, 254
 Buckley, Mr. M. J. C., on tallies, 363; on the name "Wishmoor," 371
 Buckland, Dr., 2
 Burmah, the tattooed man from, 228
 Burton, Capt. R. F., on hereditary transmission, 9; on collections from the Holy Land, 41; Hamath stones, 41; on human remains and other articles from Iceland, 341; on the primordial inhabitants of Minas Geraes, 407
- C.
- Calori, Prof. Luigi, on a scaphoid skull, 140
 Campbell, Mr. J. F., on the Kimmerians and Atlanteans, 130
 ————— Dr. A., on worked implements and tallies, 363; on serpent-worship, 386; on Gáro Hill Tribes, 395; on the Atlantean race, 402
 Carcharodon, perforation in, 91
 Castration, 402
 Centenarians, 78
 Charlesworth, Mr. E., on crag fossils, 89, 91

- Charnock, Dr., on hereditary transmission, 10; on the Wallons, 10; on Darwinism, 38; on the Hamath stones, 63; on race and civilisation, 65; on centenarians, 88; on Oceanic dialects, 103; on the Eskimo, 106; le Sette Communi, 108; on the Kimmerian and Atlantean races, 127; on the Basque race, 157; on Mann, 165; on Queensland dialects, 175; on moral irresponsibility, 188; on enlargement of the ear lobe, 198; on the tribes of Aracan, 247; on man and ape, 329; on serpent-worship, 387
- Chinese seals in Ireland, 135
- Clarke, Mr. Hyde, on the Hamath stones, 62, 90, 309
- Clermont-Ganneau, M., skull obtained by, 54
- Cobbold, Dr. Spencer, on perforation in crag fossils, 92
- Collyer, Dr., on hereditary transmission, 8; on perforation, 93
- Committee of instruction to travellers, 361
- Conway, Mr. Moncreu D., on serpent-worship, 385
- Cooper, Mr. W. R., on the Moabite jars, 341
- D.
- Darwin, Mr. Charles, on the expression of the emotions, 443
- Darwinism, strictures on, 21
- Davis, Dr. Barnard, on the hair of Oceanic races, 95; on a scaphoid skull, 140
- Dawkins, Mr. W. Boyd, on the Queensland dead, 176; on report of Council, 429; on the pleistocene mam-malia, 438
- Dialects of Queensland, 166
- Dibley, Mr. George, on serpent worship, 386
- Discussions, 8-10, 37-40, 62, 64, 87, 92, 103, 106, 156, 157, 175, 182, 188, 198, 205, 232, 246, 254, 328, 341, 346, 362, 371, 384, 395, 402, 423
- Doherty, Dr. Hugh, on outlines of biology, 133
- Donors. *See* list of Presents.
- Dordogne, on implements from, 362
- Doubleday, Mr., on sterility, 28, 30
- Dowler, Dr., on the antiquity of man, 330
- Down, Dr. Langdon H., on the presidential address, 442
- E.
- Ear-lobe, enlargement of, 109
- Esquimaux, the descent of the, 104
- Ethnology of Belgium, 310
- and philology, papers on, 351
- deductive and descriptive, 352
- Eunuchs of India, 402
- Evans, Mr. John, on ancient stone implements of Britain, 429
- Expression of the emotions, 443
- F.
- Falconer, Dr., 2
- Fertility and sterility, 21; among the Patagonians and the Quissama, 35
- Financial statement, 424
- Fins, the westerly drifting of, 205
- Fothergill, Dr. J. M., on the tattooed man from Burmah, 232
- Fox, Col. A. Lane, on implements from St. Brieuc, 68; on stone celts from the Shevavoy Hills, 348; on flint implements in the Thames Valley gravels, 439
- Francis, Lieut.-Gen. G. G., on stone implements from Paviland, 2
- Franks, Mr. A. W., on the tattooed man from Burmah, 228; on worked implements, 363
- G.
- Galton, Mr. F., on hereditary transmission, 3
- Garo Hill tribes, 389
- Gascoigne, Dr. G. C., on the tattooed man, 232
- Gibb, Sir Duncan, Bart., on physical condition of centenarians, 78
- Godwin-Austen, Major H. H., on Garo Hill tribes, 389
- Goldsmid, Mr. Augustus, on race and civilisation, 65
- Grecs, Les, 132
- Guernsey, flints from, 68
- Guiana, British, picture-writing in, 254
- H.
- Hair, of Oceanic races, 95
- black and red, 99
- of Europeans, 100
- of a Hindustanee, 102
- Hamilton, Mr. Charles, on Brazil, 423; on Palestine exploration, 423
- Hamath stones, the, 41-52, 90, 129, 309, 445
- Harris, Mr. Geo., on hereditary transmission, 3; on Palestine discoveries, 63; on race and civilisation, 66; on comparative longevity, 69; on moral irresponsibility, 183
- Harrison, Mr. J. Park, on enlargement of the ear-lobe, 190; on the

Moabite jars, 341; on serpent-worship, 384
 Heath, Rev. Dunbar I., on man and the ape, 328; on the Moabite jars, 331
 Heathens, a colony of, 446
 Hecla, cockney tour to, 342
 Hénu, M., on implements from St. Brieuc, 68
 Hereditary transmission, 3
 Herm, Island of, flints from, 68
 Higras of India, the, 403
 Holthouse, Mr., on moral irresponsibility, 189
 Howorth, Mr. H. H., on Darwinism: fertility and sterility, 21; reply, 39; on the Avars, 114; westerly drifting of Nomades: part ix—the Fins, 205
 Hughes, Mr. T. McKenny, on implements from Paviland, 3; on hereditary transmission, 9; on Darwinism, 37; on race and civilisation, 64; on centenarians, 87; on perforations in shark's teeth, 93; as scrutineer, 425
 Hunt, the late Dr. James, on the Norwegians
 Huxley, Prof., on fair-haired people, 19, 20; on skull measurements, 441; on the Presidency, 442

I.

Iceland, human remains from, 341, 344
 Implements from Dordogne, 363
 ——— flint, from Paviland, 2; from Guernsey and Herm, 68; from Wishmoor near Sandhurst, 364; on the Thames Valley gravels, 429
 ——— stone, from Paviland, 2; from Saint Brieuc, 68; from the Shevaroy Hills, 348
 Instructions to travellers, 296; by Dr. Barnard Davis, 296; by Mr. E. B. Tylor, 297; by Mr. Boyd Dawkins, 298; by Col. A. Lane Fox, 298, 300, 301; by Mr. A. W. Franks, 302; by Dr. J. Beddoe, 304; by Prof. W. Turner, 308; by Capt. Bedford Pim, 205
 ——— committee of, 361

J.

Jackson, the late J. W., on the Atlantean Race of Western Europe, 397
 Jeffcott, Mr. J. M., on Mann, its names and their origins, 159
 Jeffreys, Mr., Gwyn, 2
 Jones, Professor T. Rupert, on implements from Dordogne, 362; on a flint implement station at Wishmoor Bottom, 371

K.

Kimmerians, the, 127, 130, 197
 King, Lieut. C. Cooper, on a flint implement station at Wishmoor, Sandhurst, 364
 Kokotowi, great barrows of, 199

L.

La Race Prussienne, 131
 Languages and traditions, Australian, 257, 291
 ——— of Queensland, 166
 Lewis, Mr. A. L. on Darwinism, 38; on race and civilisation, 64; on Mann, 165; on Mr. Bonomi's instrument for measuring, 182; on moral irresponsibility, 188; on man and ape, 328; on Gáro hill tribes, 395
 Library, 427
 List of Presents, 1, 20, 41, 67, 90, 94, 137, 179, 190, 227, 313, 330, 342, 371, 396
 Lockhart, Dr. W., on Chinese seals found in Ireland, 136
 Lubbock, Sir John, on the enlargement of the ear-lobe, 199; Presidential Address, 429; on preservation of historical monuments, 441
 Lukis, Rev. W. C., on flints from Guernsey, 68
 ——— Captain, on flints from Guernsey and Herm, 63

M.

Magnussan, Mr. Erik, on Icelanders, 346
 McDonald, Mr. A., on preparing the dead of Queensland, 176
 Man and the ape, 315
 Mankind, their origin and destiny, 307
 Mann, its names and their origins, 159
 Mantegazza, Paolo, *Quadia della natura umana*, 132
 Markham, Mr. Clements R., on Arctic committee, 291; as auditor, 423, 424
 Marad, human remains from, 60
 Mary River, Queensland, 176
 Martin, Mr. Richard B., as auditor, 423, 424
 Medical jurisprudence, 131
 Meetings, ordinary. *See* Ordinary meetings.
 Members elected, 1, 20, 41, 67, 89, 94, 179, 189, 313, 371, 396
 Minas Geraes, 407
 Moabite Jars, the, 331
 Moggridge, Mr., on Ogham Stones, 205
 Museum, 427

Musters, Lieut., on fertility among Patagonians, 35

N.

Nomades, westerly drifting of, 205

O.

Oceanic races, hair of, 95

Ogham pillar stones in Ireland, 201

Ordinary meetings, 1, 20, 41, 67, 89, 94, 137, 179, 189, 227, 313, 330, 342, 371, 396

Origin and destiny of mankind, 307

Owen, Professor, on perforation in sharks' teeth, 91

—— Major, S. R. I., as scrutineer, 425

P.

Papers, list of, read at the British Association meeting held at Brighton, 351

Papers read: hereditary transmission, 3; characters of the Wallons, 10; strictures on Darwinism, sterility and fertility, 21; anthropological collections from the Holy Land, 41; on remains from Siloam, 53; from Deir-es-Sinné and Marad, 54; from Shakkah, 55; from Yarbrūd, 58, 60; race, characters, and civilization, 63; comparative longevity, 69; on the physical condition of centenarians, 78; on evidence of human workmanship in the crag, 91; on the hair of oceanic races, 95; on the hair of a Hindustanee, 102; the descent of the Esquimaux, 104; Le Sette Comuni, 108; peculiarities of the Australian cranium, 137; on a scaphoid skull, 140; origin of the Basque race, 150; Mann, its names and their origins, 159; aboriginal dialects of Queensland, 166; preparing the dead of Queensland, 176; on an instrument for measuring the human body, 180; on moral irresponsibility, 183; artificial enlargement of the ear-lobe, 190; the barrows of Kokotowi, 199; Ogham pillar stones in Ireland, 201; drifting of nomades, part ix, 205; the tattooed man, 228; the hill tribes of North Aracan, 233; the Ainos, 248; picture-writing in British Guiana, 254; Australian languages and traditions, 257; report of the Arctic committee, 291; man and the ape, 315; the Moabite jars, with a translation, 331; on human remains from Iceland, 341;

on human remains from Iceland, 344; stone celts from the Shevavoy hills, 348; report on anthropology at Brighton, 1872, 350; on implements from Dordogne, 362; on a flint implement station near Sandhurst, 364; the origin of serpent-worship, 372; on Gāro Hill tribes, 389; Atlantean race of Western Europe, 397; the Kojahs of Southern India, 402; primordial inhabitants of Minas Geraes, 417

Patagonians, fertility among the, 35

Paviland, stone implements from, 2

Phayre, Sir Arthur, on enlargement of the ear-lobe, 198; on the tribes of Aracan, 246

Picture-writing in British Guiana, 254

Pike, Mr. L. Owen, on the English, 20
Pim, Captain Bedford, on the Esquimaux, 107

Prehistoric archaeology, papers on, 351
Preservation of historical monuments, 441

Price, Mr. F. G. H., on fertility among the Quissama, 35

Pritchard, Mr. Htudees, on human hair,

Psychology, papers on, 352

Q.

Questions for explorers, 296 (*see instructions to travellers*)

Quaritch, Mr. B., on Darwinism, 38

Quatrefages, M. A. de, on la race Prussienne, 131; on general craniology, 135

Quissama, fertility among the, 35

Queensland dialects, 166

R.

Report of the Arctic committee, 291

—— on anthropology at Brighton, 350

—— of council for 1872, 425

Ridley, Rev. Wm., on Australian languages and traditions, 257

Rink, Dr. Henry, on the descent of the Esquimaux, 104

Rolleston, Professor, 429

S.

Saint-Brieuc, implements from, 68

St. John, Mr. R. F. St. Andrew, on the hill tribes of north Aracan, reply, 247; on the Ainos, 254

—— Commander, H. C., on the Ainos of Yeso, 248

Scaphoid skull, 140

Schmidt, M., on human remains in America, 435, 437

Scrutineers of the ballot, 1873, 425;
report of, 442

Serpent-worship, origin of, 372

Shakkah, human remains from, 55

Shortt, Dr. John, on the Kojahs of
Southern India, 402

Siloam, human remains from, 53

Skull measurements, 55, 57, 60, 62,
139, 441

Shevavoy hills, stone celts from, 348

Sterility and fertility, 21

T.

Talbot de Malahide, Lord, on serpent-
worship, 384

Thurnam, Dr., on skull measurements,
441

Topinard, Dr. Paul, on Australian
races, 307

Treasurer's statement, 423

U.

Umana, Quadri della natura, 132

V.

Vanderkindere, Léon, on the ethno-
logy of Belgium, 310

W.

Wallace, Mr. A. R., on sterility, 27,
36

Wallons, characters of, 10, 18

Walford, Mr. C., on centenarians, 87

Wake, Mr. C. S., on man and the ape,
315; reply, 329; on the origin of
serpent-worship, 372; reply, 388;
on the Hamath stones, 445

Webster, Rev. W., on the Basque
race, 150

Westropp, Mr. Hodder M., on Ogham
pillar stones in Ireland, 201

Whittaker, Mr., on perforation of car-
charodon, 92

Wishmoor Bottom, implement station
at, 265

Y.

Yabrúd, human remains from, 60



"A book that is shut is but a block"

CENTRAL ARCHAEOLOGICAL LIBRARY
GOVT. OF INDIA
Department of Archaeology
NEW DELHI.

Please help us to keep the book
clean and moving.